THE ARCHITECT & BUILDING NEWS

22 MARCH 1956 · VOL 209 · NO. 12 · ONE SHILLING WEEKLY

- ST. PAUL'S PRECINCT
- IMPERIAL COLLEGE PLAN
- CONTRACTORS' PLANT I

PUBLISHED IN LONDON SINCE 1854

The world's household names use

BRADY
REGD.
SHUTTERS · ROLLING DOORS
The doors commanding the world's largest sale



General Mills, well-known North American flour millers and packers of the famous "Betty Crocker"* cake mixes, have installed a series of electrically operated Brady Steel Rolling Doors in one of their main Canadian depots. Brady Rolling Doors in steel, wood or aluminium - hand or electrically operated - are available to fit any type of opening.

* Reg'd. Trade Mark of General Mills, Inc. and General Mills (Canada) Ltd.



G. BRADY & COMPANY LIMITED MANCHESTER 4

Telephone COLlyhurst 2797/8. *London:* New Islington Works, Park Royal N.W.10 *Birmingham:* Rectory Park Road, Sheldon 26. *Canada:* David C. Orrock & Co. (G.-Brady & Co. Canada Ltd.) 1405 Bishop Street, Montreal 25, Que. and also at 23 Scott Street, Toronto 1. *U.S.A.:* G. Brady & Co. Ltd., 11 West 42nd St. New York 18 N.Y. *Norway:* An Thorbjörnsen, Kongensgate, 14, Oslo. *Hong Kong:* Blair & Co. Ltd., Windsor House and also at Cape Town.

we shutter the world

MANUFACTURERS OF BRADY HAND AND POWER OPERATED LIFTS

S. & B.

All the hot water she wants . . . with the NEW FLAVEL NATIONAL



The new Flavel National instantaneous sink gas water heater is the perfect unit for use either alone or in addition to a solid-fuel boiler system. Your clients will be quick to grasp the advantages of having plenty of really hot water *instantly* available all the year round and at any time of the day or night. In summer, a boiler system can prove an expensive nuisance; a National in the kitchen does away with the need for fires when the weather's warm and ensures that there's *always* plenty of hot water on tap for early morning shaves, quick cups of tea and a thousand other things.

The high-quality and perfect finish of the National ensure trouble-free performance throughout its long life; the architect who specifies or recommends it can rest assured of the future comfort of his clients.

THE FLAVEL NATIONAL INSTANTANEOUS SINK GAS WATER HEATER

- ★ Provides a full half-gallon of piping hot water every minute.
- ★ A broken feed type heater, with all working parts totally enclosed. Designed for wall fixing, it works equally well on both hard and soft water.
- ★ Slim, easily detachable one-piece steel case finished in sparkling, clean-at-a-wipe cream or white vitreous enamel.
- ★ The removal of a single knurled nut enables the heat exchanger to be unhooked and cleaned in less than five minutes by the consumer.
- ★ 12 Bray burner jets require no maintenance in normal use. Rating: 35,000 B.Th.U/hr. Connections: gas ½″ B.S.P.; water ¾″ B.S.P.
- ★ Height 25¼″, width 8½″, depth 7¼″, weight 20½ lbs. 6″ spout supplied as standard, but 9″, 12″ or 18″ spouts are available.

Recommend your clients to SEE A* FLAVEL *FIRST!

SIDNEY FLAVEL & CO. LTD., LEAMINGTON SPA. TELEPHONES: (SALES) 3091 AND 100. TELEGRAMS: FLAVELS

A



Expanded Steel —widely used for sixty years

Only Expamet Expanded Steel can claim sixty successful years as a steel sheet reinforcement for concrete. Today, Expanded Steel is widely used for all types of civil and structural engineering—buildings, tanks, reservoirs, swimming baths, sea defences and other reinforced concrete construction work. There is a wide range of standard variations and weights in 'Expamet' Expanded Steel Reinforcement. Our engineers can discuss your problems and prepare designs and estimates.

Reinforcement

DESIGN SERVICE

A complete concrete reinforcement design service is operated by Expamet to help you. Take advantage of it. Briefly, the service includes: 1. Design with economy; 2. Preparation of working drawings; 3. Supply of reinforcements; 4. Delivery on schedule; 5. Technical advice and literature.

BOLT BOXES

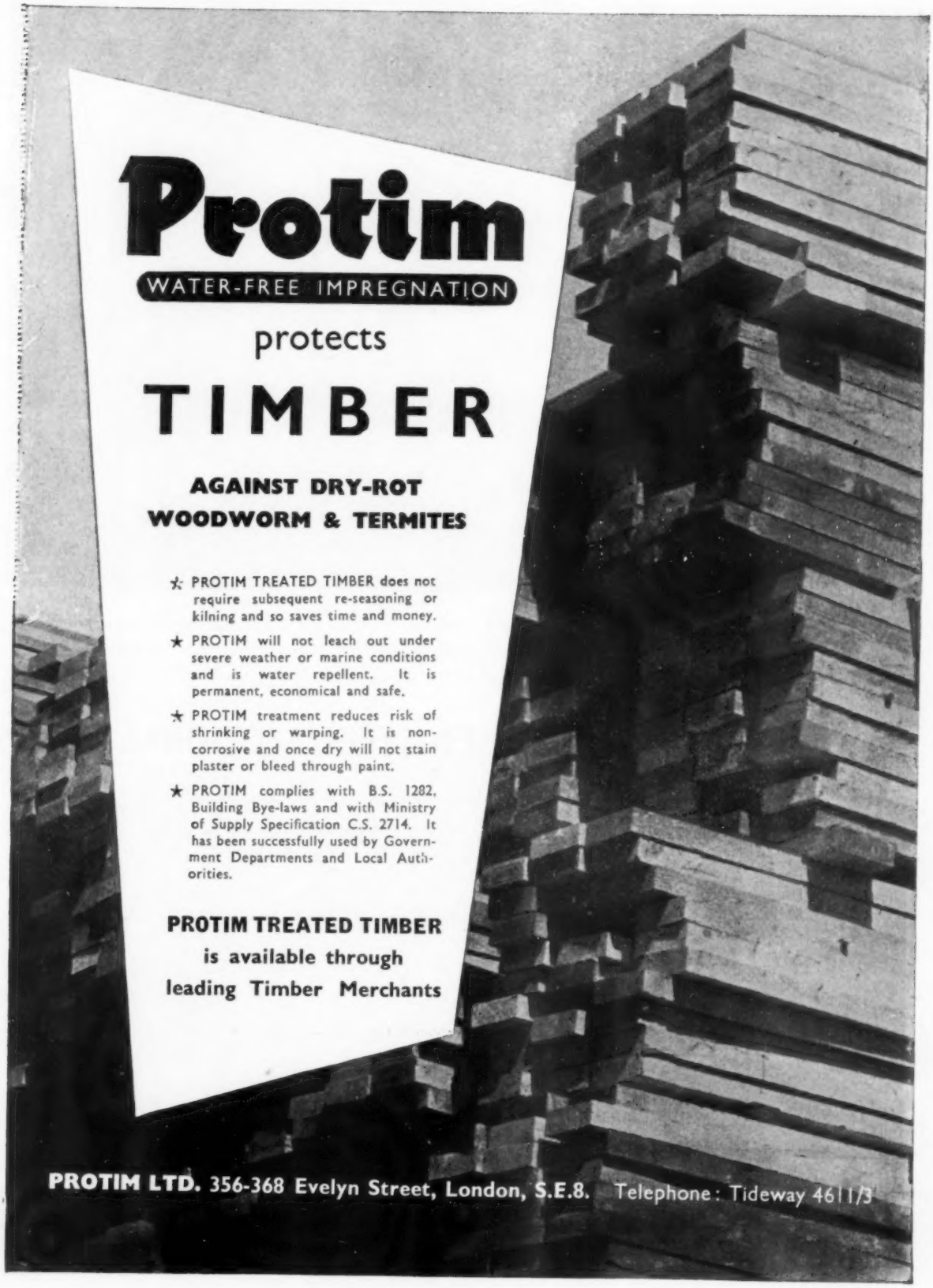
Expamet Foundation Bolt Boxes are manufactured from ¼" mesh Expanded Metal, which has the property of being able to retain wet concrete. The Boxes are made cenical, cylindrical or rectangular, to suit particular requirements, in any reasonable dimensions.

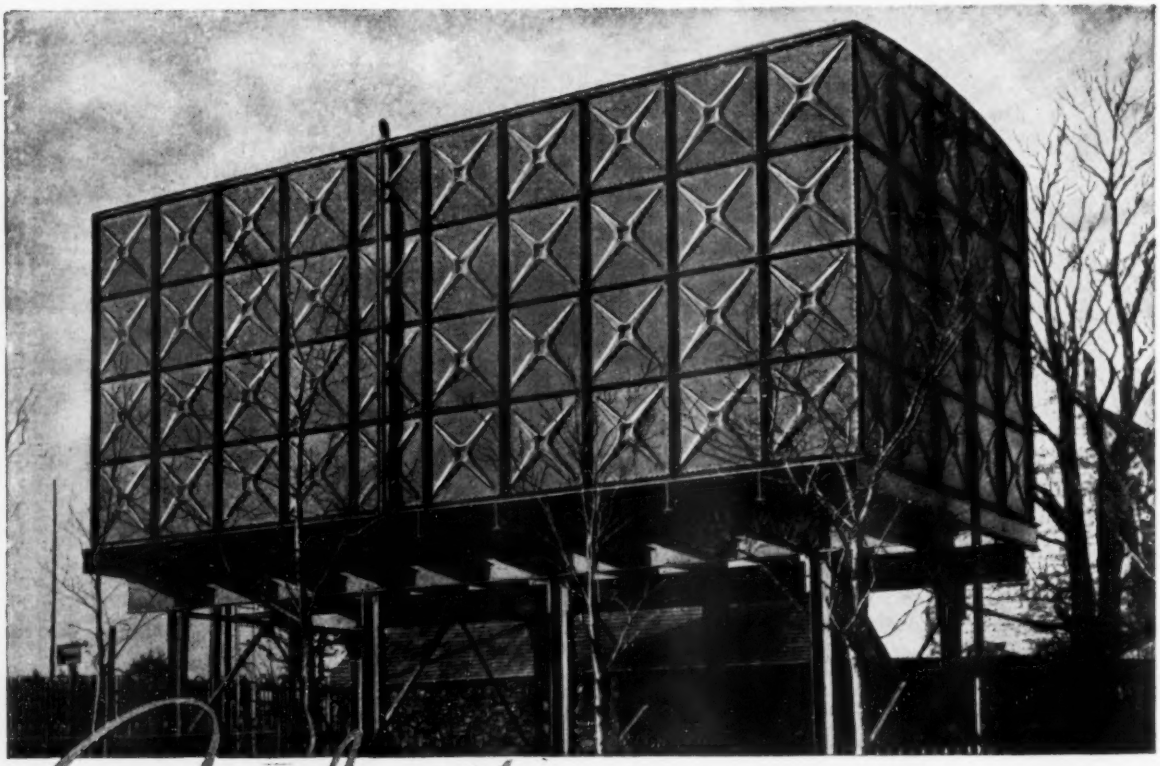
Expamet

EXPANDED METAL PRODUCTS

THE EXPANDED METAL COMPANY LTD

3 Burwood House, Caxton Street, London, S.W.1. Tel. ABBey 7766
P.O. Box 14, Stranton Works, West Hartlepool. Tel. Hartlepools 5531
Also at: Aberdeen · Belfast · Birmingham · Cardiff · Dublin · Exeter
Glasgow · Leeds · Manchester · Peterborough


Protim
WATER-FREE IMPREGNATION
protects
TIMBER
AGAINST DRY-ROT
WOODWORM & TERMITES
★ PROTIM TREATED TIMBER does not require subsequent re-seasoning or kilning and so saves time and money.
★ PROTIM will not leach out under severe weather or marine conditions and is water repellent. It is permanent, economical and safe.
★ PROTIM treatment reduces risk of shrinking or warping. It is non-corrosive and once dry will not stain plaster or bleed through paint.
★ PROTIM complies with B.S. 1282, Building Bye-laws and with Ministry of Supply Specification C.S. 2714. It has been successfully used by Government Departments and Local Authorities.
PROTIM TREATED TIMBER
is available through
leading Timber Merchants
PROTIM LTD. 356-368 Evelyn Street, London, S.E.8. Telephone: Tideway 4611/3

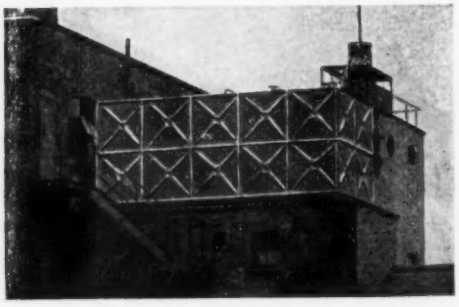


Braithwaite

PRESSED STEEL SECTIONAL TANKS

rapidly constructed and easily enlarged; space saving and flexible in application; adaptable to the most difficult sites.

SECTIONAL STEEL TANKS provide the simplest and most effective solution to the problem of storage capacity for water, fuel oil and other liquids. Readily adaptable to siting conditions and flexible in application, the pressed steel sectional unit method of tank construction provides economical storage capacities from 400 gallons upwards. Complete technical data will be forwarded on request, and, if you can provide a brief outline of your particular problem, we shall be only too pleased to send details of similar installations.





INDUSTRIAL PLANT DEPARTMENT
are suppliers of
TANKS, BOILERS, CHEMICAL PLANT, LADDERS and SCAFFOLDING and other items of static plant and equipment.

SELLING AGENTS

THOS. W. WARD LTD

HEAD OFFICE: ALBION WORKS, SHEFFIELD

LONDON OFFICE: BRETTENHAM HOUSE, LANCASTER PLACE, STRAND, W.C.2

BT/19

IT PAYS TO THINK OF DEXION

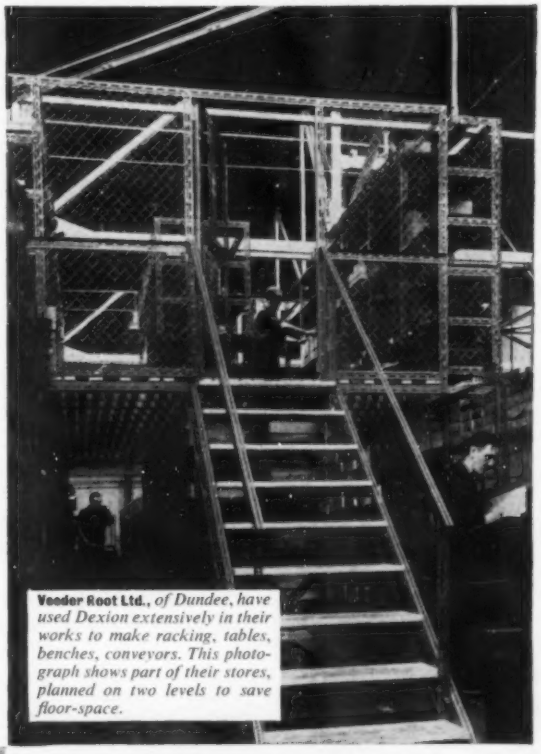
—at the planning stage

A FACTORY LAYOUT must be flexible, capable of being adapted at short notice to changing circumstances. This applies particularly to storage requirements and works equipment.

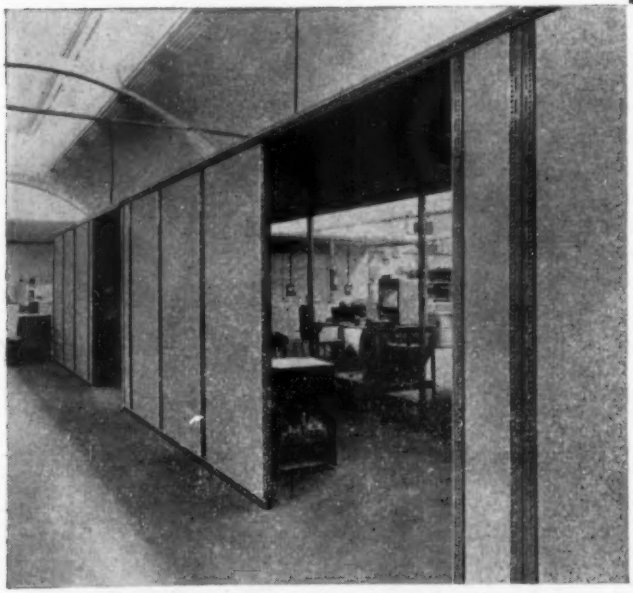
There is no more versatile material for building stores and equipment, exactly to your own designs, than Dexion Slotted Angle. Such Dexion equipment is quick and cheap to install. And any Dexion structure can be readily adapted and altered to meet changing needs. There is no waste, no scrap: Dexion is fully recoverable, and can be used again and again.

When you are planning the building and layout of a factory, Dexion deserves careful consideration at an early stage. This versatile material may bring about important economies, initially and for years to come.

A technical design and estimating service is available free; and for large installations, construction teams will carry out the work if required.



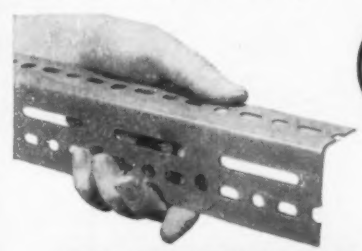
Veeder Root Ltd., *of Dundee, have used Dexion extensively in their works to make racking, tables, benches, conveyors. This photograph shows part of their stores, planned on two levels to save floor-space.*



Murphy Radio Ltd. *rapidly erected this partitioning on a Dexion framework, to give a shaded area for testing television sets. Dexion can be used with plywood, asbestos sheeting, corrugated metal, hardboard or any similar cladding material.*

GET THE FACTS

Dexion 225 is sold in packets of ten 10-ft. lengths, complete with bolts. Steel Dexion (price from 1/3½ to 1/5 per foot) is rust-protected, stove-enamelled. Where a light but strong, non-magnetic, non-corroding material is required, use Alloy Dexion (full technical details and prices on request). Send today for sample piece of Dexion and illustrated booklet AU. 144 showing many uses in industry. Dexion Ltd., 65 Maygrove Road, London, N.W.6. (Telephone MAIda Vale 6031-9.)



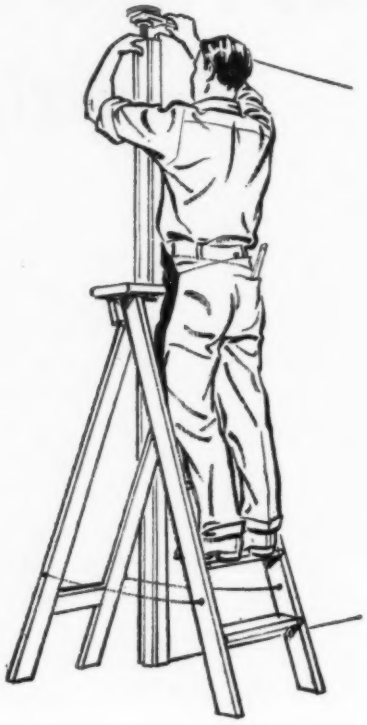
DEXION

REGD.

SLOTTED ANGLE

THE PLIMBERITE REBOND

PARTITIONING SYSTEM



The photograph (below, left) shews PLIMBERITE Rebond Partitioning in the British Van Heusen Company's new factory at Bishops Lydeard, Taunton.

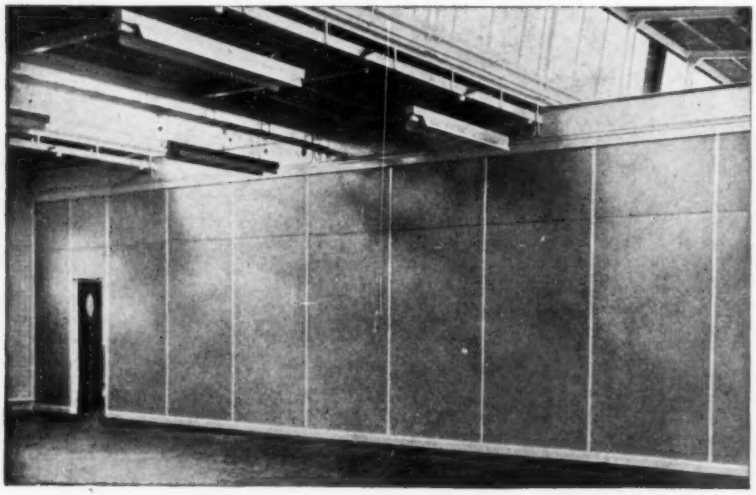
Architect: Steer & Shirley-Smith, A./A.R.I.B.A.

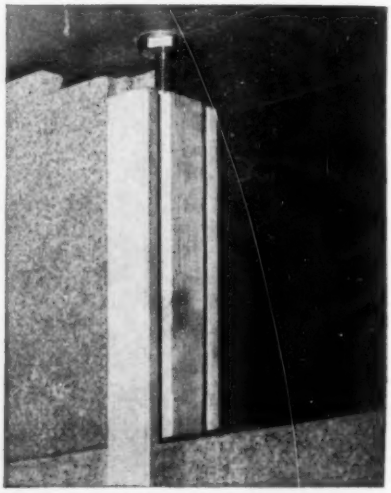
Contractor: Stansell & Sons (Taunton), Limited.

The System consists of timber posts at 4 ft. 1 in. centres, grooved to receive $\frac{3}{4}$" PLIMBERITE boards whose vertical edges are rebated to form tongues which slot into the grooves in the posts. The posts are held in position on the floor by a pin, and at the top by the PLIMBERITE REBOND screw jack, as shewn in the photograph (bottom, right).

- Construction is "dry".
- No disturbance to existing floors and ceilings.
- Doors and glazing can be incorporated as required.
- Dismantling and re-erection elsewhere can be done with negligible damage or loss of material.

Full working details with constructional drawings are contained in the PLIMBERITE REBOND Booklet, which may be had on request.





BRITISH PLIMBER LIMITED

19, Albert Embankment, London, S.E.11

Telephone: RELiance 4242

PLIMBERITE BUILDING BOARD



The Sapphire '20' Balanced Flue Gas Space Heater is the result of British scientific research and development in the field of gas utilization.
Here is the complete answer to modern requirements of maximum efficiency; warm, fresh air, free from products of combustion, *plus* the highest possible safety factor.

Sapphire "20"
Registered Trade Mark Fully Patented

Full data upon request to Sole Licensees:—

COWPER PENFOLD & COMPANY LIMITED
Sole Distributors
WILLIAM SUGG & COMPANY LIMITED
VINCENT WORKS, REGENCY STREET, LONDON, S.W.1 Telephone VICtoria 3211

For your Venetian Blinds



SPECIFY

Luxaflex

REGISTERED TRADE MARK

ALUMINIUM SLATS AND VINYL PLASTIC TAPES

For any application, for any style of architecture, with any interior decor, be sure to recommend Venetian Blinds made of Luxaflex materials. They are the only window treatment for perfect control of light and air, they assure architectural and decorative beauty, give maximum wear and need minimum maintenance. Only Luxaflex offers you a choice of 165 beautiful colour combinations. Write for additional information and for the name and address of a Venetian Blind manufacturer using Luxaflex slats and tapes to Hunter Douglas (Great Britain) Ltd.

HUNTER DOUGLAS
(GREAT BRITAIN) LTD.
10 DRAKE STREET,
RED LION SQUARE,
LONDON W.C. 1
TEL: CHANCERY 8634



Easy cleaning

A damp cloth wipes away even the most stubborn stains. The plastic tapes always keep their freshness, never stretch, shrink, or discolour.



Snap-back aluminium slats

Duratized to snap back ruler-straight, even when bent to a 90° angle. Baked-on finish cannot rust chip, crack or discolour!



Insist on this Trade Mark

Be sure the blinds you specify carry the Luxaflex "visible-invisible" trade-mark on the slats. It is your guarantee of unrivalled quality.

To Architects about to plan Roofs

Speedy Erection

72,000 Sq. ft. of BITUMETAL laid in 14 weeks





Barras Heath Wholesale Market—Coventry.
Designed by Coventry City Architect.

When you require a roof quickly erected yet with the advantages of permanence, high thermal insulation, virtually no maintenance, and an attractive ceiling too, plan for BITUMETAL.

How is this speed attained?

1. BITUMETAL Aluminium Units arrive on the site in prefabricated form.

2. Each roof is planned by a staff of experienced roofing technicians, and laid by capable workmen.

Moreover, a BITUMETAL Roof can be laid long before interior work is underway. This ensures dry working conditions for other trades.

Ask our nearest Area Manager for the latest information on BITUMETAL Roofing Technique.

BITUMETAL

ROOF
plus **CEILING**
plus **INSULATION**

WILLIAM BRIGGS & SONS LIMITED
LONDON: VAUXHALL GROVE, S.W.8 Regd. Office: DUNDEE
OFFICES & DEPOTS ALSO AT ABERDEEN · BELFAST · BRISTOL · DUBLIN
EDINBURGH · GLASGOW · LEICESTER · LIVERPOOL · NORWICH

B



Protection

Settle on ATLAS PAINTS and get the best of both! These fine finishes have a great reputation as robust protectors of property and as the means of achieving rich, pleasing decorative effects which give lasting satisfaction.

The Atlas range includes ATLAS SUPERFINISH Synthetic Gloss Paints and ATLAS SUPERCOAT Emulsion paints, as well as many other types of finishes for wood, plaster, metal, brickwork, asbestos-cement sheeting, etc.

Send now for attractive shade card and further particulars.

OR DECORATION?



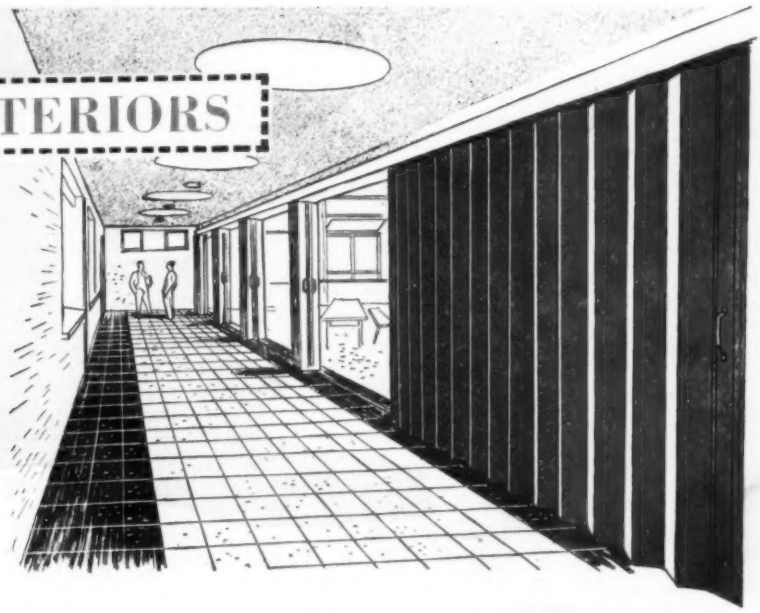
ATLAS *dependable* **DECORATIVE FINISHES**



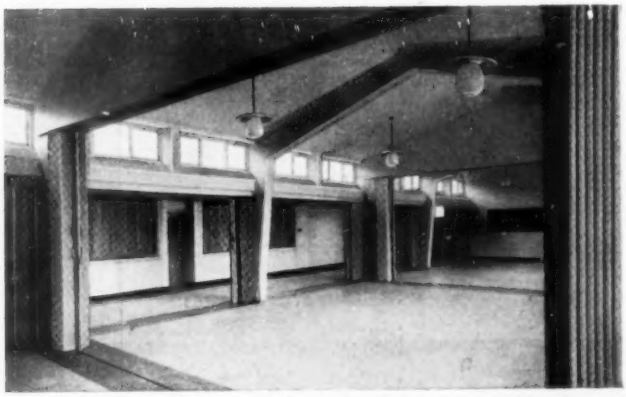
ATLAS PRESERVATIVE CO. LTD., ERITH, KENT 'Phone: ERITH 2255 (3 lines) 5721 (4 lines) 'Grams: Deoxydizer, Erith

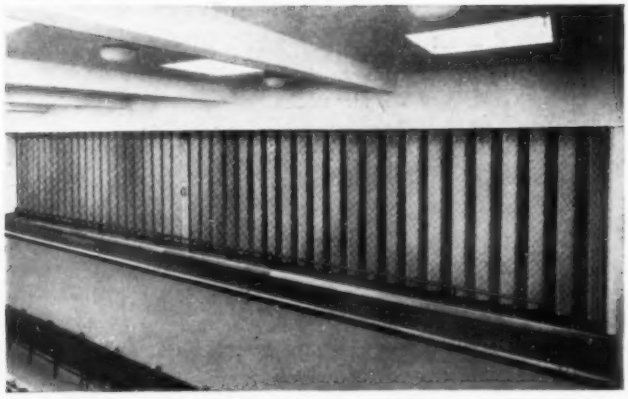
TAS/AS. 159

MODERN INTERIORS



demand the
MODERN FOLDING PARTITION





Bolton "Superfold" leathercloth covered collapsible partitions are robust and durable in construction, whilst being light and easy to handle. They offer smooth operation, attractive appearance, draught resistance and heat conservation, and the leathercloth covering, which is washable and readily interchangeable, can be supplied in a variety of shades to harmonise with any colour scheme.

Bolton "Superfold" partitions are fabricated from $\frac{5}{8}$" pickets together with suitable lattice bars. A special double-sided extruded aluminium alloy hinging strip is provided to accommodate the small section shutter plates which provide the internal support for the leathercloth. An overhead top track with ball bearing pulleys is fitted, and a single channel bottom track which can be eliminated if desired.

"Superfold" partitions are ideally suited for schools, hospitals, hotels, canteens, offices, ships, clubs, social centres, private houses, etc.



For further details send for our "Superfold" leaflet. We shall also be glad to send you, without obligation, a copy of our latest catalogue A.B. '54 which describes our complete range.

BOLTON COLLAPSIBLE
DOORS & GATES

BOLTON GATE COMPANY LIMITED · BOLTON · LANCASHIRE

'Grams: 'Gates', Bolton. Tel: Bolton 4240

dmBG136

WOOD... nature's best building material

CANADIAN

Pacific Coast

HEMLOCK



has wide range of uses

Pale greyish yellow in colour with faint reddish tone in places. The grain is uniform and fine in texture.

Some of its special ADVANTAGES

- straight even grain with small light knots
- freedom from pitch and resin
- takes paint and varnish extremely well
- has exceptional glueing qualities
- rich in appearance, does not darken with age
- lightness in weight
- strength and resiliency
- little tendency to splinter
- edge grain wears evenly

Some TYPICAL USES

- general construction
- doors and millwork
- cabinets and cupboards
- shelves
- studding
- enamelled furniture
- interior and exterior finishes
- tanks
- railway sleepers
- ladder stock
- shiplap
- gymnasium floors
- ballroom floors

FOR FURTHER INFORMATION concerning Canadian woods contact The Commercial Counsellor (Timber) Canada House, Trafalgar Sq., London, S.W.1.

Reproduced here is figure of Pacific Coast Hemlock

This advertisement is one of a series featuring Canadian Douglas Fir, Spruce, White Pine, Red Pine and Western Red Cedar.

TIM 1

[ADVERTISEMENT]



C



Steelwork by Chilton — of course

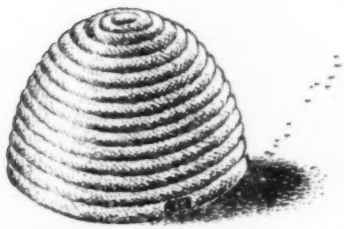


CHILTON STEEL LTD.

THE FOUNDRY, LONG MELFORD, SUFFOLK

Tele. LONG MELFORD 273 · Grams. CHILSTEEL, LONG MELFORD

The Hive



provides shelter for the bee



CANTEEN 120′ x 37′ x 10′
SUPPLIED & ERECTED FOR
THOMEAS HARRINGTON LTD..
HOVE, SUSSEX.

OTHER TIMBER FRAMED BUILDINGS
8′ 10′ 12′ 15′ 20′ 25′ 30′ WIDE
ANY LENGTH

THORNS

provide shelter
for other busy workers

Quickly!

PLEASE WRITE FOR CATALOGUE AND QUOTATION GIVING DETAILS OR DRAWING OF BUILDING REQUIRED, TO:—

J. THORN & SONS LTD., (Dept. 113), BRAMPTON ROAD, BEXLEYHEATH, KENT

BD705

Important Revisions of British Standards for Lead Pipe

Many permissible minimum weights greatly reduced

The new revisions of B.S.1085

(SILVER-COPPER-LEAD ALLOY)

permit the use of lighter weight Lead pipe underground

Tables incorporating the new British Standards for Lead pipe to B.S.602 and B.S.1085 have been prepared and are available in a revised edition of "CONCISE INFORMATION ON LEAD PIPE" free on request.

LEAD h LASTS

LEAD SHEET AND PIPE COUNCIL

In association with LEAD DEVELOPMENT ASSOCIATION

EAGLE HOUSE · JERMYN STREET · LONDON · SW1

Telegrams: Ukleadman, Piccy, London · Telephone: Whitehall 4175

B.125

WOODCARVING — No. 2 OF A SERIES ON THE MAPLE MARTYN ORGANISATION



CHARLES GISBOURNE, M.B.E., SENIOR CARVER
—one of the doyens of the trade.

A noble grain and a lifetime's skill . . .

The earlier stages of giving form to the wood have been completed. Already the carving, with its complex pattern of delicately involuted leaves, has taken shape. Now the craftsman adds the deft final touches— and in doing so, illustrates the care taken over each piece of carving by Maple-Martyn.



Panel-work

A Corner of the Workshop



In another part of the workshop a panel is being made. The heritage of skill which has earned the Maple-Martyn Organisation its name in the industry ensures perfect matching in all such work as this.

Only a few examples of Maple-Martyn woodcarving can be seen in this corner view of the workshop. Other examples, from religious subjects to scrolls and plaques, are found wherever fine craftsmanship and the beauty it creates are appreciated.

THE MAPLE MARTYN ORGANISATION

FURNISHING & DECORATION · CONSTRUCTIONAL WOODWORK
ARCHITECTURAL METALWORK · LIGHTING · HEATING

CONTRACT DEPARTMENT
MAPLE & CO. LTD · TOTTENHAM COURT ROAD · LONDON · W1
in association with its subsidiary: H. H. MARTYN & COMPANY LIMITED, CHELTENHAM

MC39A

'Hurry up! Breakfast's ready!'

He's just finished, as it happens. And a good, clean shave, too—thanks to plenty of piping hot water. Although he'd be the first to complain if something went wrong with the water supply, he seldom spares a thought for the tubing that brings it to him. The chances are that it is made of copper, so eminently suitable for the purpose.

Light-gauge copper tubing for water and waste services made to British Standards by I.C.I. Metals Division is neat, smooth-bored, economical, easily manipulated and durable.

The consistently high demand for I.C.I. light-gauge copper tubing and tube fittings is ample evidence of their quality and reliability—the outcome of many years' production experience, coupled with rigid technical control.

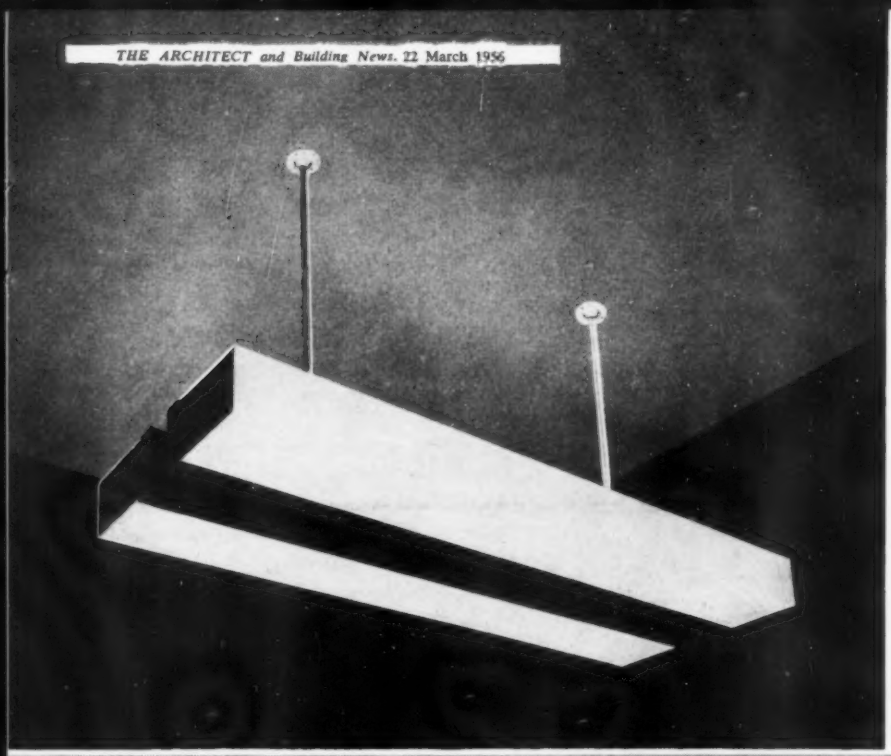
IMPERIAL CHEMICAL INDUSTRIES LTD., LONDON, S.W.1

ICI

COPPER TUBES & TUBE FITTINGS FOR TROUBLE-FREE WATER SYSTEMS

M384





Announcing . . .

Atlas domino

architectural lighting

The ATLAS 'Domino' system of fluorescent lighting offers a modern answer to modern architectural lighting problems.

The standard fitting (which is offered in 2ft., 4ft., and 5ft. lengths) is the rectangular 'Domino' fluorescent unit which consists of a sheet steel chassis section, finished in 'egg-shell black' and a white opal (040) 'Perspex' diffuser cover.

'Domino' units may be suspended from two sides of the metal chassis or from either end, mounted side by side, back to back, in runs or as single or multi-unit pendants.

Units may be of single or twin tube types.

In the hands of imaginative Architects, the 'Domino' is going to provide fascinating new solutions to the lighting problems set by tomorrow's architecture.

Send for the booklet "Atlas Domino architectural lighting units" from
Atlas Lighting Division Thorn Electrical Industries Ltd
233 Shaftesbury Avenue London WC2

. . . for Architects – by ATLAS

UTILIZE THE WASTED **LOFT-SPACE** WHICH HAS ALREADY BEEN PAID FOR



HERE IS THE IDEAL PLACE FOR:
HOBBY ROOM
CHILDREN'S PLAYROOM
GUESTS ROOM
EXTRA BEDROOM
OFFICE, ETC.

BY UTILIZATION OF THE LOFT SPACE THE VALUE OF ANY HOUSE WILL BE CONSIDERABLY IMPROVED.

LIGHT AND ***VENTILATION*** *are provided by the*

VELUX ROOFLIGHT WINDOW

An Advanced Construction which provides maximum light and controlled ventilation for all buildings.

Can be fitted to sloping roofs of any covering.

A sound and economical investment.

Metal Encased Wood - Maintenance Free

Double Glazed - Sound and Heat Insulating

Pivot Hinged - Easy Cleaning From Within

Improved Ventilation.

All-Weatherproof.

Maximum daylight in the room.

Cheaper than Dormer Windows.

Easy installation in new as well as existing buildings.

Note the easy cleaning of all panes from within.



An exterior — and how an interior can be arranged by Velux Rooflights.

District Agents in many parts of the country at your service.

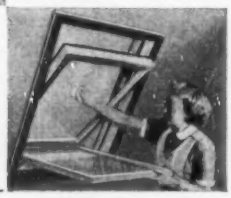
A few Agencies in the Midlands and Southern counties are vacant. Qualified applicants are invited to apply.

Please write for further details to:

The VELUX COMPANY LIMITED

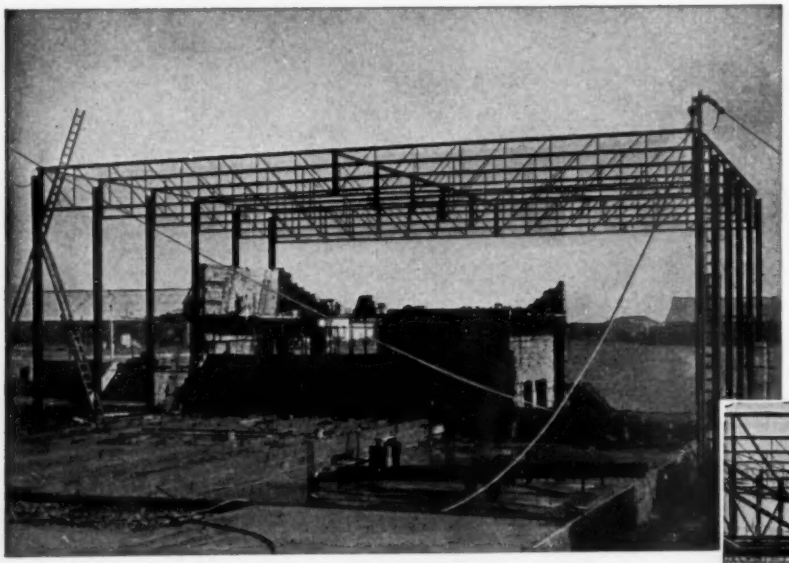
167, VICTORIA STREET,
LONDON, S.W.1

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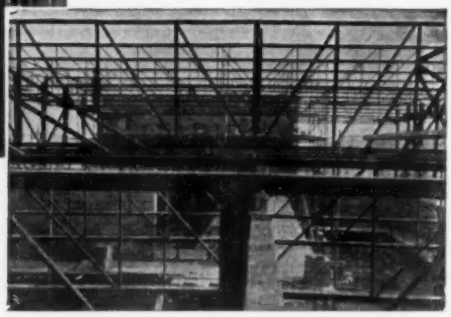
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THE COLLCUTT BUILDING

THE architects, whose impressive scheme for the Imperial College is illustrated in this issue, have made this statement on the Collcutt building.

"The Government announcement of January 1953 meant, clearly and definitely, that within a few years a vast new scheme of buildings and open spaces must change the character of the "Island Site" on which the Collcutt building stands. There must be new massing and a new skyline which will affect and should enhance the surroundings. One of the resulting problems has been whether the Collcutt building should be retained in isolation, be absorbed as part of Imperial College, or be removed.

"A building cannot be divorced from its surroundings; graciousness and beauty spring from a combination of buildings and open spaces. Here, there are no vistas; the great axis running through the Albert Hall to Cromwell Road is tragically misused and consistently blocked by a series of buildings running across it. The Collcutt building is so sited that, apart from the tops of its towers, it cannot be seen except from a comparatively unfrequented cross road.

"There is no measuring-rod for determining the aesthetic value of a building. Opinion — informed and uninformed — suffers drastic change, sometimes within a short period; there is real difficulty in assessing quality at any given time. In the past, the Collcutt building, if considered at all, has been generally regarded as an interesting but undistinguished example of the decadent end of an eclectic period. In "Nineteenth Century Architecture in Britain," which was published in 1950, many buildings and many architects are discussed, but there is no mention of Imperial Institute and the only reference to Collcutt is contained in a phrase (on page 110): " . . . he (Lutyens) soon showed how greatly he could improve on the turgid renaissance style of E. W. Mountford, T. E. Collcutt, or Aston Webb, whose taste still lagged sadly behind Shaw's."

"But whatever the merits of the Collcutt building it was bound, had it remained on the site to be taken out of its scale and context into an alien world. Blocked from the south, it would have been surrounded on its other sides by vast buildings dedicated to the future.

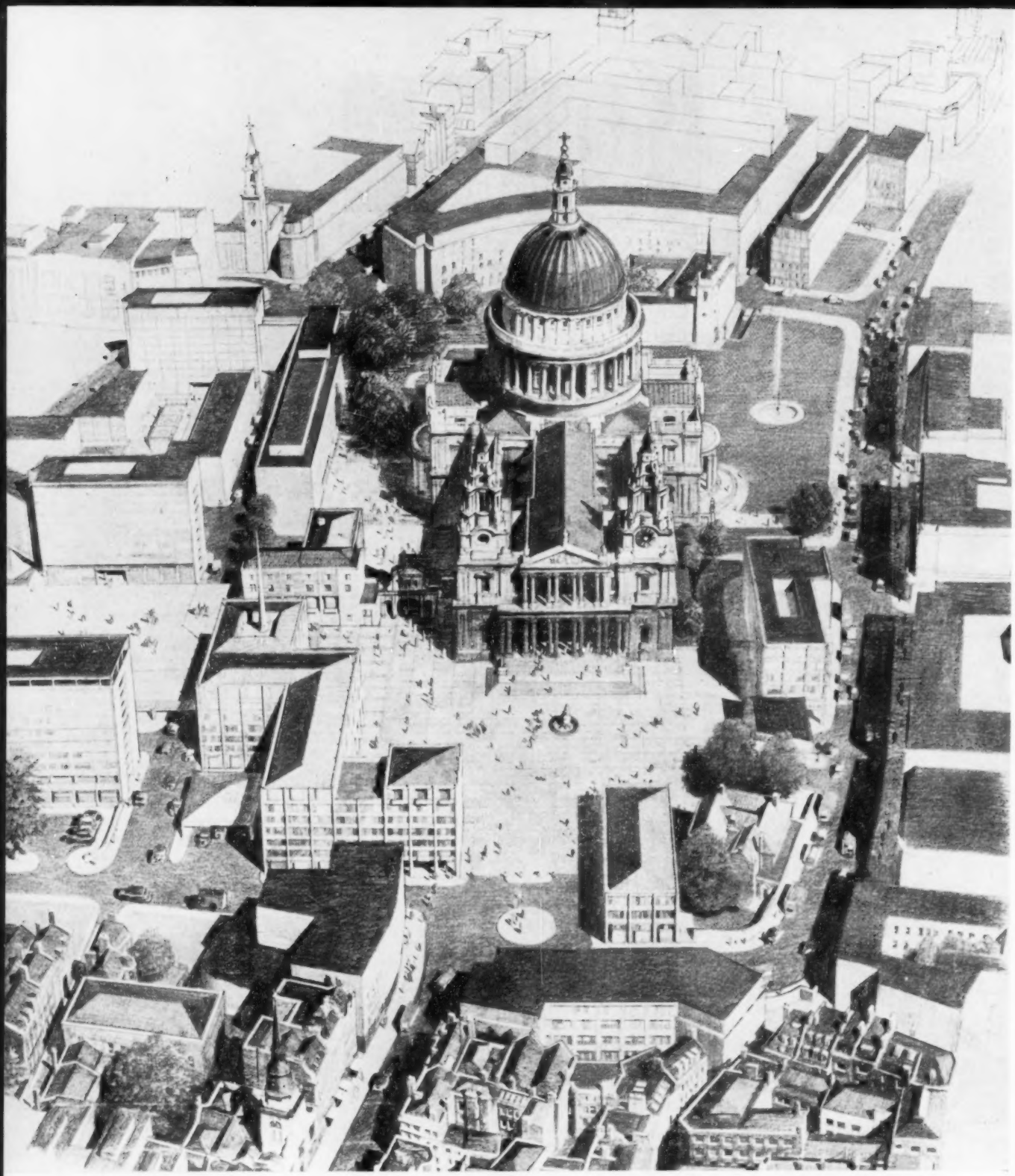
"The fate of a building should not rest on aesthetic values alone. Other factors include use and sentiment. As to use, the building contains singularly little worth-while accommodation, with most of it facing north and of difficult proportions. There are supreme examples of sentiment such as the Abbey, St. Pauls, and the Palace of Westminster which are each integral with the life of the nation. In a lesser but still strong degree, the Albert Hall brings and will continue to bring memories of great assemblies, balls, concerts and oratorios; but those who have entered the Collcutt building are unlikely to be inspired by any similar feeling.

"Returning from this single building to the scheme as a whole, the great advantage of its demolition is that it removes from the plan form an east-west axial barrier and thus permits planning in depth with a sense of space, and opens to the south the very heart of the site. In the studies that allowed its retention it was, advisedly, left detached in a grass surround but, quite apart from the loss of freedom of pedestrian and vehicle circulation and the serious loss of overall accommodation, the plans became constricted and suffered from the shadowing of east-west buildings across the site.

"The question then arose as to whether the central tower could and should be retained. The factors against this are: first that the scale and skyline of the island site must, under any plan, be so altered that the tower would lose its significance; secondly that the tower springs from the roof and would need either part of the existing building or a new building around it; thirdly that as a memorial without function it would be a self-conscious and irrelevant relic in a scheme serving a different age.

"Our architectural heritage is very large and varied, but the decision to remove any building of possible quality should not be lightly made. Many obsolescent buildings add charm to cities and country towns. The Universities at Oxford and Cambridge have gained from buildings of all ages standing together in harmony and in contrast. But it is difficult to imagine the Collcutt building at either Oxford or Cambridge, and still harder at a great new centre of contemporary buildings dedicated to the future of Science and Engineering on a defined site.

"Change is rarely popular, because the removal of a familiar object brings a sense of insecurity. The decision to build in South Kensington this vast project of international significance was made public over three years ago; there must be regret at the removal of a known landmark but the responsibility would have been great and strong criticism justified if the efficiency and quality of the whole scheme had been prejudiced by its retention."



The Precincts of St. Paul's

The Court of Common Council of the Corporation of the City of London are to consider, today, Sir William Holford's plan for the precincts of St. Paul's, details of which are published on pages 276-279 of this issue. The aerial perspective above illustrates the forecourt as proposed

EVENTS AND COMMENTS

KHAKI INTERLUDE

The editor's note explaining my absence may have led some people to think of me shivering out the long nights in a series of ditches or cow-byres. This was not so. The near-palatial building in which I lived was by order of the commandant centrally heated to continental standards because of the large number of officers from the N.A.T.O. countries staying in it. In spite of this and the many expressions of delight from these officers the tougher brand of British officer was constantly complaining and throwing wide the vast neo-Georgian windows to admit piercing shafts of icy air. Returning to an unheated house where spring was said to have arrived I promptly retired to bed for a week.

The course was terrifying but interesting and the various visits made in fine weather provided many opportunities of seeing the villages of Hampshire and Wiltshire at their pale sunlit best. On each trip our American friends asked us to pick out the oldest building so that they could photograph it. One day we visited a Royal Naval shore establishment set up in and around a large and not very lovely late Victorian house. The entrance hall is extremely pompous with free standing columns, a vast staircase, like a London club, and much ornate plasterwork. All rather fine in its way. When I first saw it some years ago it was cream and green, but now it is most excellently done in several bright colours with a blackcurrant fool ceiling background. The result is tremendous. The captain was clearly pleased that we all liked it, he admitted to misgivings, more particularly as a party of admirals was due quite shortly. The colour scheme was thought out by "an artist" on the staff and the work done by the resident maintenance men. Other service establishments please copy.

The highlight of the course was when the builders set light to the roof of our lecture room during an indoor exercise. The fire brigade was called but the exercise continued and we pretended not to notice.

IMPERIAL INSTITUTE

It has been quite a week. *Monday*. The Kensington Society held a public meeting, attended by about 500 people, to discuss the preservation of the Imperial Institute. Lord Methuen was in the chair and John Betjeman was the principal speaker supported by Sir Hugh Casson, Stanley Hamp and Professor H. Russell Hitchcock. I do not think that any new arguments were put forward but the meeting passed a resolution protesting "in the strongest possible terms" against the Government's decision to demolish the Collcutt building which houses the Imperial Institute.

Tuesday. The subject was debated in the House of Lords. The main line of attack, which was heavy and sustained, was on the secrecy which the Government had preserved and on the way in which it had disregarded the advice of the Royal Fine Art Commission.

Lord Cherwell thought that undue fuss was being made about the building and argued that if keeping it meant going short of technologists it would be little consolation to the unemployed man and his hungry family in the future. One or two other noble Lords were also shooting on the wrong target. Winding up the debate for the Government, Lord Salisbury asked, "How often do the members of the Fine Art Commission spend an hour or two feasting their eyes on this glorious building? I suspect that most of them have never given it a thought until now." I think Lord Salisbury is here shooting on the wrong range, for people interested in buildings are always thinking about them and going about with their eyes open. I, though no member of the R.F.A., always receive a small thrill of pleasure when I see Collcutt's tower on the sky-line.

The Government will not be tied, but there is a hope. The L.C.C. is considering the re-zoning of the area.

Thursday. Graham Dawbarn's scheme was at last released to the press and photographs of the model appeared in Friday's papers. I feel that the architects have been very harshly treated over the whole affair to date. The subject of attacks on all sides, they have not been able to reply nor show their solution. I am, therefore, very pleased that Mr. Dawbarn has now been able to put his case. (*See leader and article*).

My first reactions to the proposed building are that the site is quite clearly too small for the accommodation required to be put upon it. Furthermore, I cannot see how the Imperial Institute building or its tower could satisfactorily be incorporated in the design without almost starting again at the beginning.

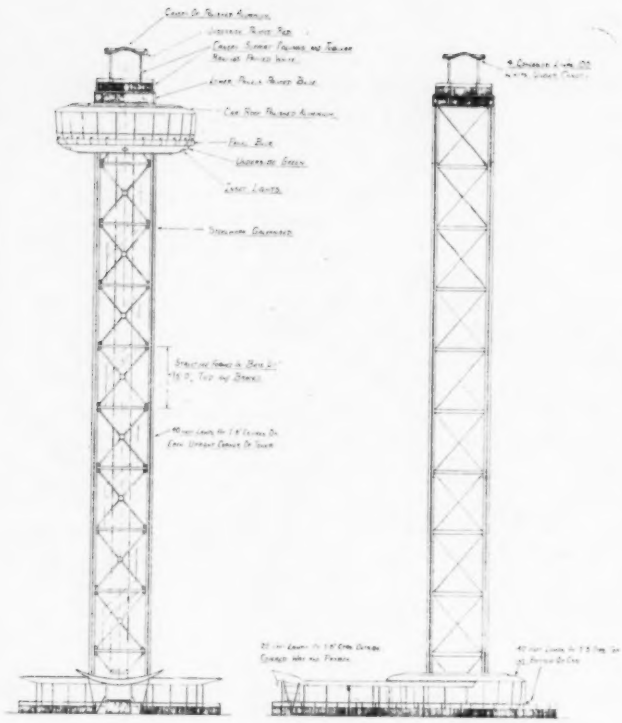
If, as a result of public opinion, L.C.C. re-zoning or any other cause the reconstruction of Imperial College is delayed for say an additional 3 more years and the Collcutt building is saved, will it have been worth it? No doubt industry will cry out even more loudly for its lost technologists but one has only to read the morning papers to see that the shortage of buildings is not the only thing holding up their supply.

On the other hand if we lose the Collcutt building we must see to it that it is the last time that such a thing can happen. We must devise some system by which, whether within or outside the framework of the R.F.A.L. I do not know, large development schemes of all kinds, whether Government or privately sponsored, are placed before the public at the earliest stage.

The case of the Imperial Institute has advanced so far that a good deal of harm is going to be done whatever the outcome. Let us have a system which will prevent such a thing happening in the future.

BATTERSEA TOWER

Somewhat overshadowed by the threat to Collcutt's tower, another tower has been causing a rumpus in Chelsea. My picture shows it. Designed by Guy Sheppard and Roderick Ham, it is intended to be built in the Festival Gardens at Battersea. It will be 162 feet high and 15 feet square. A spiral staircase will occupy



Proposed viewing Tower for Battersea Pleasure Gardens

the space in the middle and a circular lift car in the form of a ring will climb up the outside. This car will be capable of rotating and will seat 48 people, so that everyone will have an all round view without moving from his seat. The tower would be illuminated at night. Although the L.C.C. had previously approved the scheme there were many objectors to it and the M.o.H.&L.G. ordered a public enquiry. Objectors were there, or were represented, in force. They seem mainly to have represented the "down with the Festival Gardens" group rather than people objecting to the actual tower.

My own feeling is that one of the major attractions at any such place is a tower or wheel where people can be provided with an unusual view of a familiar place, in addition such erection provides a "vertical feature" always much missed at Battersea. The trouble with this design is that whereas it looks well enough with the car at the top of the tower, it looks like something unfinished when the car is down. It is in this position that it will be most often see. I say let them have their tower if it will contribute to the success of the Festival Gardens but, please no flashing lights and no loudspeakers.

NOTTING HILL GATE

News that Notting Hill Gate underground stations are to be reconstructed and combined will be welcomed by pedestrians and car drivers alike. For not only will it be possible to widen the road at this maddening narrowness but it will also be possible to move from the Circle Line to the Central London Line without getting wet or killed or both.

SCHEME FOR ST. PAUL'S

The week wound up with the publication of Sir William Holford's scheme for the St. Paul's precinct. J. M. Richards and Sir William discussed it after the 9 o'clock news on Friday and pictures appeared on Saturday morning. Saturday would have been better for the radio discussion so that we could have had the picture before us. I notice that Sir William hedged a bit on the really important question "How quickly could the scheme be put into effect?" by replying that it could be started at once.

It seems to me to be a good scheme, and well suited to the character of the City of London where there are no monumental vistas and where pomp and circumstance are accustomed to flank narrow lanes rather than vast formal squares. St. Paul's is placed in a pedestrian precinct of reasonable size where it will not appear as a pudding on a dish but as part of a sensibly developed area. Views of the cathedral between other buildings will be provided from many directions and I am pleased to see that the approach from the river has not been omitted. I am very pleased that it has not been given the overpowering importance suggested in the Royal Academy plan. I feel sure that there will be cries that Sir William's plan is not formal enough but I think objectors will be wrong.

Let us hope that the scheme will obtain general approval so that steps may be taken to start work without further delay. We have waited eleven years.

HOUSES OF THE FUTURE

I have not yet seen the Smithson's Ideal Home of 25 years time, nor did I see Lionel Schein's All Plastics house at the Paris Salon des Arts Ménagers. However, it is interesting to compare them from reports and illustrations. The Smithson's is a combination of plastic form and plastics, so that the house appears to have been gnawed out of the solid. Many of the ideas will undoubtedly come to pass but I question whether keen tea-drinkers will agree to draw their boiling water from a thermostatically controlled tap. While many people would be uncomfortable in this house of the future I feel sure the Smithsons would not.

M. Schein on the other hand has gone once more for the circular house, divided into wedge shaped compartments with a central rainwater pipe. The bath is said closely to follow the contours of the body thus economising space and water—ah yes, but whose body? I see practical difficulties here. The heating is by warm air provided by a mobile boiler outside the house. The boiler is wheeled away and stored in the summer. A nice idea but with awkward possibilities.

COME ON OXFORD!

The Boat Race is on Saturday and I hope Oxford win. Since school days I have backed them and No. 3 in the boat this year—N. Paine (King's School, Canterbury and Trinity)—is Canterbury architect Robert Paine's son.

ABNER

NEWS

Sydney Opera House

The International Competition sponsored by the New South Wales Government to select a design and an architect for an Opera House to be built on the shores of Sydney Harbour, closed yesterday.

Mr. F. P. Buckley, Agent General for New South Wales, said that the response to the competition had been most gratifying, and about 730 competitors from all over the world had registered.

The United Kingdom, with 200 registered, has the greatest number of competitors; Australia comes next with 180, and the remainder come from the U.S.A., Canada, South Africa, France, Germany, Holland, Italy, New Zealand, Switzerland, Austria, Belgium, Denmark, Eire, Finland, Greece, Hungary, Saar, Spain, Sweden, Cyprus, Egypt, Israel, Jordan, Turkey, Hong Kong, Japan, Malaya, Philippines, Singapore, Thailand, Brazil, Kenya, French Morocco and Mexico.

Registered competitors are not required to submit designs until December of this year, when they will be assessed by a Committee consisting of two Australian and two overseas architects.

Prizes for the first three winning designs are £A5,000, £A2,000 and £A1,000 respectively, and it is expected that the results of the competition will be known early next year.

L.M.B.A. Lord Mayor Luncheon Postponed

The L.M.B.A. luncheon to the Lord Mayor, which was to have taken place on May 3, has been postponed until the autumn as the Lord Mayor is going on an official visit to New York at the middle of April and will not be back till May 7.

Appointment

It is announced that Mr. T. Lancaster has been appointed Surveyor and Architect, British Road Services, in succession to Mr. W. C. Leslie-Carter, who is to retire at the end of March.

In Parliament

Kensington Controversy

The disputed fate of Collcutt's Imperial Institute occupied the House of Lords for a full meeting on March 13. Against the admitted necessity to expand the provision for technological training—which the Government propose to do by developing the Imperial College Science on the South Kensington site—Lord Mottistone led a frontal attack for the preservation of the Imperial Institute buildings.

He had climbed to the top of the central tower of the institute a day or two before, and came down to the House of Lords to speak in fervent praise of the splendour of its construction. Within and without this massive structure there was to be found exquisite craftsmanship in rare and beautiful materials. It was fireproof; it was light and airy! it was neither old nor decayed; 63 years for a building of this solidity and soundness was the prime of life. It was a masterpiece of the work of Thomas Collcutt; he died in 1924 but his partner, Mr. Hamp, was alive and had shown Lord Mottistone the beautiful drawings made by Collcutt, which bore witness to the clear and artistic skill that he lavished upon it. Because present-day usage and economic stress tended to the elimination of decorative detail, it was folly to sneer at the more elaborate work of our immediate forbears. The Collcutt building occupied less than one-tenth of the site area. It should be possible by careful planning to compensate for the loss of so small an amount. How many detailed alternative plans had in fact been prepared? If ever there was a case for architectural competition, even a limited one, this was it.

It had been said that to compensate for the loss of space it would be necessary to build to such a height as to destroy the aesthetic value of what it was sought to preserve. He did not agree. The site was so large that there was plenty of room for very tall buildings. By careful massing of ingeniously designed blocks and lofty buildings the jewel-like quality of Collcutt's building might be enhanced rather than diminished. Indeed the Institute, as the jewel it undoubtedly was, suffered from its setting. He would like to see it re-set, in a stronger and bolder frame.

Unrecognised "Gem"

The Marquess of Salisbury, who made the final speech for the Government, was quite unimpressed by the passionate pleaders for the Institute. It was surprising, in his view, that this "gem" had remained so long in our midst without a soul drawing attention to it. Only in one work of reference could he find anything about it—a few lines of tepid praise in a Penguin edition listing all the buildings of London. Collcutt had no mention in the *Dictionary of National Biography*. He did not believe that the building had all the importance which had now been wished on it. How often had members of the Royal Fine Art Commission even turned aside to feast their eyes on its beauties? He had never heard of anyone making a pilgrimage to the Imperial Institute on purely architectural grounds. It might be architecturally interesting and characteristic of the period in which it was built, but he did not believe it was a great monument, or would ever be regarded as such.

Site Review

The Earl of Crawford and Balcarres found the origin of the difficulties in the decision to settle 3,000 students, with all their apparatus in the fixed rectangle of the site; and that, as Lord Mottistone had said, Imperial College had been given a free hand to deal with it, as if it were a cleared site. If it could be shown that the necessary development could take place while retaining the main block of the Collcutt building, as he believed could be done, they would have gone a long way towards a solution. If full use were made, for example, of a site on the opposite side of Exhibition Road, it might be possible not only to reduce the excessive density proposed by Imperial College within the rectangle but to retain as well the Collcutt block. In this connection he quoted the decision of the L.C.C. planning committee the previous day that there should be further discussions about the manifold implications of the scheme between the architect and the council and the developers, and possibly at a higher level, before any final conclusion was reached. Lord Salisbury took up this point.

There was no question when the Government first put up the plans for expansion of the college, he said, of there being any other area available in the immediate vicinity. All the surrounding blocks had been zoned as residential. Now the L.C.C. were reconsidering the matter further, and he thought it implicit in the statement that this would be with a view to possible re-zoning of the neighbourhood. If this were so it would introduce a new factor, and ought to be further considered. But as yet the Government had had no official intimation on the subject.

COMING EVENTS

The Chadwick Trust

March 27, at 5.30 p.m. "A Survey of Progress in the Control of Stream Pollution," by B. A. Southgate, C.B.E., Ph.D., D.Sc., F.R.I.C.S., Director of Water Pollution Research, Department of Scientific and Industrial Research. At the Royal Society of Health, 90 Buckingham Palace Road, S.W.1.

The Housing Trust

March 27, at 6 pm. Diploma Project by Students of the Department of Town Planning, University College, London. At 13 Suffolk Street, S.W.1.

The Modular Society Ltd.

March 27, at 7 p.m. "What a Manufacturer wants from the Modular Society," by Peter Gardiner, M.I.Struct.E., Managing Director of Gardiner, Sons & Co. Ltd., Bristol. At The Building Centre, 26 Store Street, W.C.1.

The PRECINCTS of St. PAUL'S

Sir William Holford's Design for an Urban Landscape Setting

THE proposals for the precincts of St. Paul's made public last week, come as a result of a request by the Minister of Housing and Local Government for fresh consideration of this part of the County of London Development Plan. The Corporation of the City appointed Sir William to prepare a scheme and report extracts from which follow.

Design considerations

St. Paul's is a symmetrical building about its east-west axis, though without the complete unity aimed at by Wren in his Great Model design. But in its setting it is not axial at any point—if the view of the north transept from Canons' Alley is excepted—and there is not room to make it so. In place of the fixed perspective on a main axis which is presented by the front of the *Invalides* in Paris or the *Capitol* in Washington and which has now been opened up still further in the case of *St. Peter's* in the Vatican City, St. Paul's offers a series of views at the end of streets and alleys and gaps between buildings, which are sometimes narrow and mostly irregular. It is seldom apprehended as a whole, except from the air; and often it is only one or two features—the dome, or one of the Western Towers, or the porch or the pedimental figures on one of the transepts, that close the view. There is no major open space or 'piazza' which introduces the building; it is either seen rising out of a picturesque conglomeration of lower buildings, itself only partly exposed (as in the well-known view from Fleet Street), or it emerges suddenly as one turns a a corner into Godliman Street, or Dean's Court or Ave Maria Lane or Paternoster Row, filling the middle distance with its black and white masonry. The right principle to adopt in designing a layout for such a building must surely be to improve and increase the variety of viewpoints for those who move about the precinct, whether on foot or on top of a bus, and to achieve a sense of enclosure not by building a great wall or screen all round the Cathedral (which would reduce its scale and lessen its interest), but by creating a whole series of smaller and related open spaces, each getting its character from some aspect of the building and using it to close the view from its approaches. Although the precinct has to be threaded through by pedestrian and carriage ways, there should be an attempt to give a sense of enclosure and composition to the forecourt, to Paternoster Square, to the shopping Centre, and to the tree-planted space round St. Paul's Cross.

Around St. Paul's there has been for some time a special height restriction which was referred to again, and illustrated, in the Report on Reconstruction in the City of London, 1947. This has the effect of limiting the general height of all buildings, except for towers and existing structures such as Faraday House, on the south-west, south and south-east of St. Paul's, below an inclined plane drawn from significant viewpoints on the Thames Bridges or the South Bank, to the upper cornice of the Cathedral.

This restriction is in my opinion entirely justified in order to maintain the historic views from the southern approaches to central London, as well as from the river; for St. Paul's belongs to the south bank of the Thames as well as to the north. The view of the dome from Blackfriars Bridge, for example, is already spoilt by too great a bulk of building projecting above this sight-line. But, locally, the restriction has one unfortunate effect; it produces rows of buildings on the same ground level whose frontages will naturally extend in breadth to the full width of the building sites, and in height to the maximum permitted by the restriction.

The relationship between these buildings and the Churchyard is likely to be dull and unhappy, however interesting they may be individually. They are built, or to be built, at different times to the designs of very different architects. Their uses are not uniform and their floor heights differ. While these are normal conditions in City building, they are obviously much less than is hoped for in the re-planning of the area around St. Paul's. Some idea of the result may be had from a comparison with the frontages on the east side of St. Martins-le-Grand, from Gresham Street to the Churchyard, where similar conditions apply, although the average height is a little greater and the facing material mostly stone. If this principle were to be applied to all the remaining open sites in the precinct it would be a retrograde step and would make valueless all the other proposals for improvement.

I have therefore adopted, wherever possible, the entirely contrary principle of more open planning, with blocks of different height and a varied skyline; thus permitting a less congested layout, and offering views through and beteen the taller buildings, to the many interesting silhouettes of trees, towers, spires and domes in which this area is already rich. Aesthetically, as well as economically, the inclusion in this scheme of many low buildings and open spaces allows—and sometimes even calls for—an increase in height of the tall blocks on the north side of St. Paul's. On the south side, however, it is already too late to apply this principle in full.

On the other hand, complete uniformity of treatment for the Carter Lane/Cannon Street frontages is impracticable, even if it were desirable; and an attempt at imposed harmony would not ensure distinction but actually discourage it. In my view the principle of variation could be applied here also, to a limited extent, opening up interesting views of smaller open spaces, of the Cathedral itself, and of the towers of St. Augustine and St. Nicholas. This could be done: (i) by breaking the building line (but not the kerb line) on the south side of the widened Cannon Street, to allow for one or two sections of the new frontage to be brought forward over a length of colonnade, or set back at corners; (ii) by setting back the ground floor building line on either side of Old Change, south of the main frontage depth of the new buildings, in order to create an open or parking space; (iii) by allowing a waiver from the overall height restriction in the case of smaller architectural features and towers; subject to approval of their design, silhouette and facing materials, and to their measuring not more than 24 feet in either dimension on plan.

These are some of the principles of design which I have adopted in this layout for the immediate precincts of St. Paul's.

NOTES OF THE PROPOSALS

The Y formation of the Church Yard naturally divides the area into three parts—North, East and South; and it is convenient in describing the plan to go round in a clockwise direction, starting and ending with the Forecourt at the top of Ludgate Hill. See plans, pages 278 and 279.

Forecourt: Northern Half

In the first two stages of redevelopment only the northern half of the forecourt should be rebuilt. This should include building A & B on the plan; realignment of Ave Maria Lane; widening of Paternoster Row and stairs up to Paternoster Square. The form of Block A is that of a four-leaf screen. It should be an extremely simple and reticent building and should stand 75 feet above the forecourt pavement and 95 feet, including the partly open roof terrace. This tall screen-like building would give a sense of enclosure to the forecourt its use would include textile warehouses, offices, goods loading bay, etc. Building B should also be started early in the programme. It is a semi-domestic building closely linked in scale and character with the Chapter House near by. It would be only 48 feet to the parapet from forecourt level and would contain workshops, offices and flats or maisonnettes on the top floor.

Paternoster Square and the Terrace

These include Building C on plan; widening and partial covering of Paternoster Row; upper or ground level car park; lower car park Paternoster Square terrace as an Exhibition Gallery with pedestrian circulation and bridges to Building C, Newgate Street and the Shopping Centre.

Block C is one of the three tall blocks of offices running north and south and evenly spaced on the north side of Paternoster Row. They are as high as the roof ridge of the Cathedral, i.e., about 118 feet above forecourt level. As they are fairly low buildings in between them and the blocks are 250 feet apart, the views of the dome, the north pediment, and the western towers of St. Paul's from Newgate Street and other northern points will be preserved. All three blocks could be built immediately, on cleared ground.

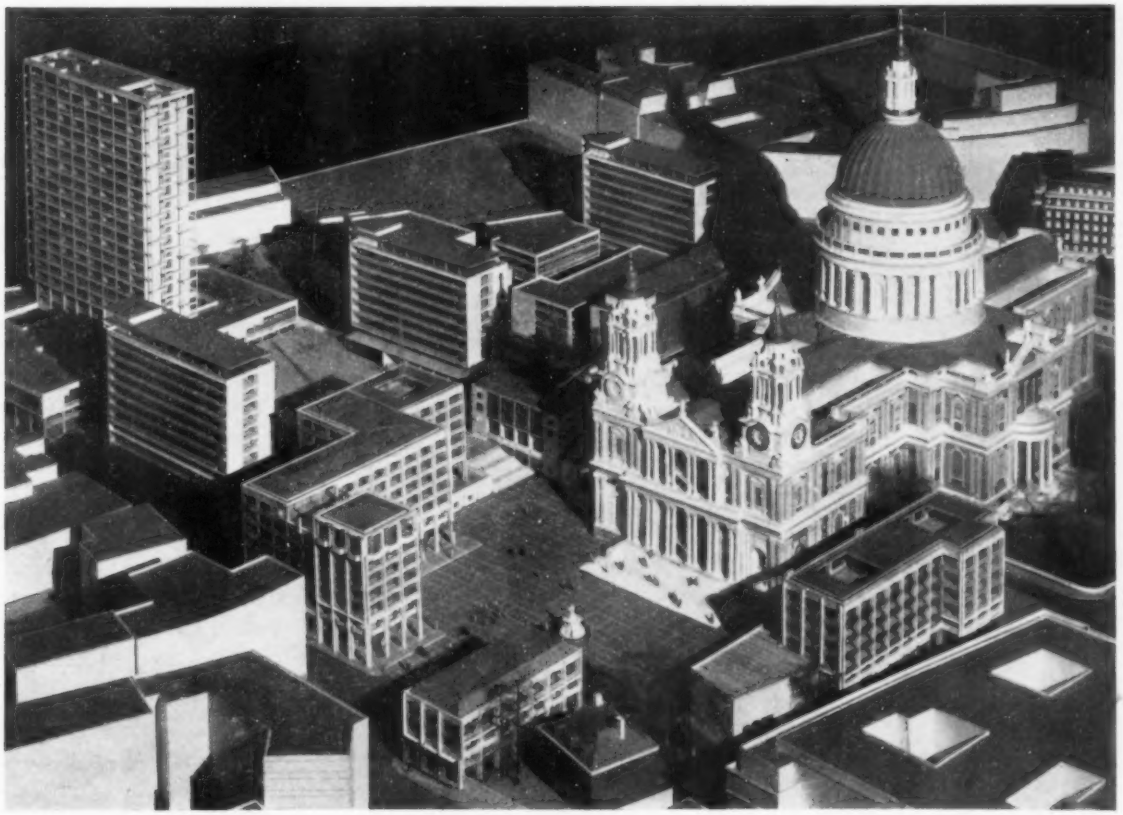
Double Car Park and Terrace

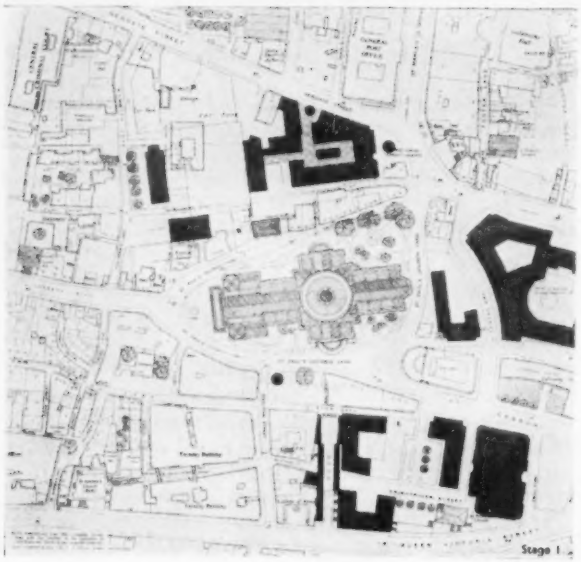
The middle level of the three blocks formed by the double car park and terrace is proposed to be at existing ground level. This means that the surface car park on either side of Block C as well as the two entrance roads would be at the same level. The ground would be excavated to form a lower parking floor. The terrace itself provides an open paved area with pedestrian access on many sides, but is closed on the west side by permanent service building opposite Block C. The terrace will be constructed and heating incorporated in the floor so that prefabricated structures can be erected for a variety of purposes, display, public and trade exhibitions and exhibitions of a cultural nature. The car parking should accommodate in all about 240 cars.

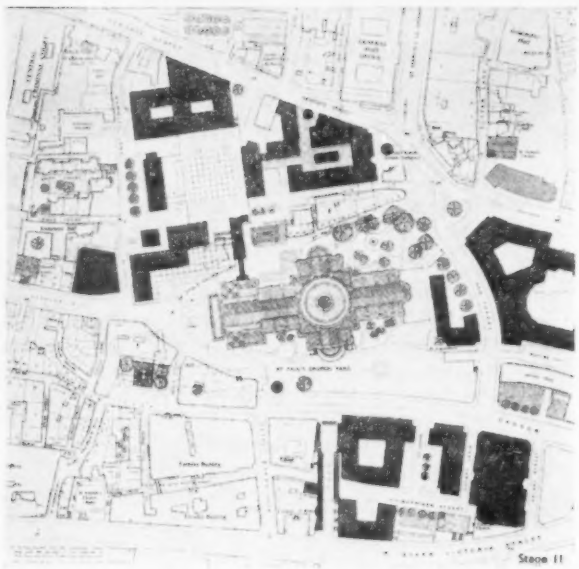
High Block and Group R

Building Group R contains offices, shops and warehouses and a slender block of about 20 floors above them. The site is between the terrace and Newgate Street and a comparatively thin block with its windows facing East and West and its narrow side facing toward the forecourt would spoil no important view of the dome or of the western towers, but would give immense scale and interest to the terrace (which it overlooks) and the whole building composition of the north side of the Church Yard. Messrs. Yorke, Rosenberg and Mardall co-operated with the architect in

The model from south-west. The Deanery, unaltered, is shown bottom foreground with office buildings screening the forecourt. From the opposite side of the forecourt steps lead up to the terrace, flanked on its east and west sides by offices (blocks C. & D.). At the north end of the terrace is a group of buildings (block R.) with a point block rising above them for 20 storeys.







The Precincts of St. Paul's

the layout of the group of buildings (Block R) and the design of the high block, which is incorporated in the model of the scheme.

The shopping centre

This area consists of Buildings D and E on plan; Ivy House and extension with internal service court; 35 shopping units with offices or shops over; kiosk; flower shop and rebuilt entrance to St. Paul's Station (Central Line). At a later stage building F replacing existing shops on the Churchyard.

The remainder of the space between Newgate Street and Paternoster Row is proposed to be laid out as a new shopping centre, the ground floor of which would be entirely pedestrian. Ivy House would be retained in its present state but an extension would be added to its east side.

The Stone Yard and Temple Bar

This area includes the Chapter House; Building B on plan; Temple Bar and side structures, masons' sheds, etc. The idea of a stone yard around the reconstructed Chapter House is to provide masons' shops for repair work; and if limited access could be given to the public, a kind of outdoor museum, where masonry remains could be viewed by students and visitors.

The paving of the north side of the church yard is designed to take a single coach or car from Cheapside.

St. Paul's Cross and the North Gate

The public garden where St. Paul's Cross used to stand will be preserved and extended to the east and south. The new Block F is slightly further away from the Cathedral on the average so as not to require the lopping of the Plane Trees, which would in fact over top it. The building would act as a fairly close screen between the Cathedral and garden on the one side and the shopping centre on the other.

The East End and Choir School

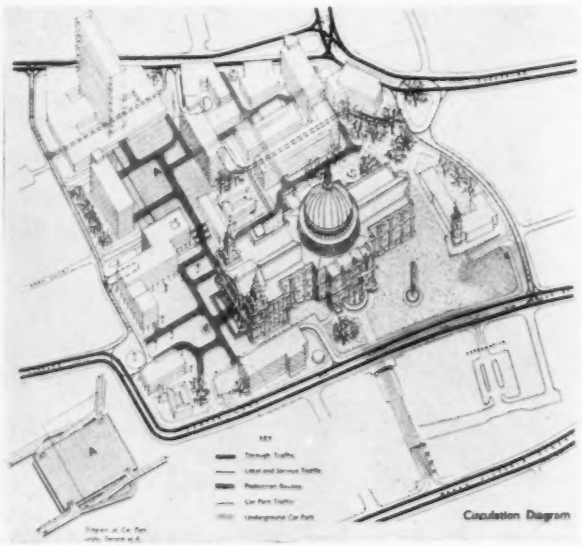
This includes the extension of the garden; new tree planting; Choir school and playground and the Tower of St. Augustine.

The curve of New Change and the frontage of the Bank of England buildings are not related to the Apse of the Cathedral nor to its axis; they were both designed to skirt the east end behind an intermediate group of buildings. It would obviously be much better if there were no buildings except the choir school and St. Augustine's in this space. They would be quite sufficient to act as a buffer; new change would not have to be a complete corridor street and there would be room for a properly designed Choir School. The form shown on the outline plan is only an indication of what shape the building might take.

The south lawn: there is already a small formal garden at the foot of New Change. Here on the south side of St. Paul's with Cannon Street set back, and the fine diagonal view of the Dome and the South transept kept open, the simplest and most magnificent foreground it would be possible to devise, would be a lawn reaching up to the masonry flank of the Cathedral.

Southern group and Pedestrian Terrace

This includes blocks K, L, M, N, O and P on the plan, widening of Cannon Street, etc. An alternative proposal for blocks K, L, M and P suggests that they should be developed comprehensively with a public open space at street



Circulation Diagram

level, raised terrace and bridge across Cannon Street and covered car park below.

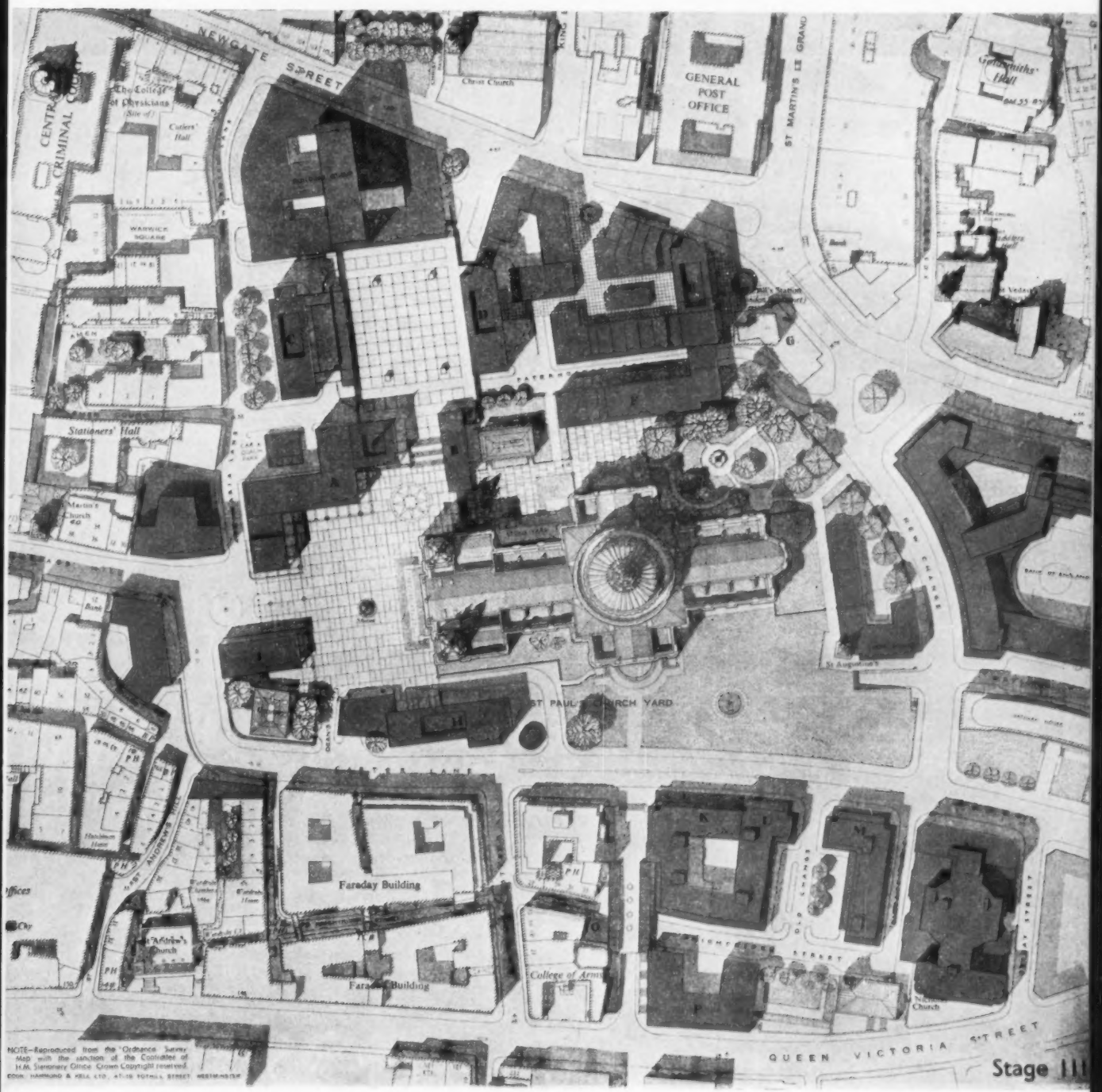
For an under street car park it is suggested that while the various lengths of Cannon Street are under construction the opportunity should be taken, as in route 11, to provide for sub-surface car parking.

The Southern Half of Forecourt

This includes Building J, H, the Deanery reconstructed and walled along Carter Lane; a wall courtyard, with orchestra terrace over and car park entrance below on east side of Deans Court; Service Road from the forecourt to Cannon Street. This will be almost the last part of the Precinct to be redeveloped.

Blocks H and J complete an informal but balanced composition; they maintain the principle of providing openings into the forecourt and closing the view by building on the far side. Block J forms one side of the square traffic space at the top of Ludgate Hill and closes the view looking south from Warwick Lane and Ave Maria Lane.

Building J forms a buffer between the forecourt and Creed Lane; and would make with the portico of Building A the gateway to the west entrance of the cathedral. Building J would only be about 52 feet high, but Building H could rise to about 75 feet above pavement level, the same height as the main block of Building A. A narrow service road links up the forecourt with Cannon Street.





Original Model; low view from south

THE IMPERIAL COLLEGE SCHEME

architects: NORMAN & DAWBARN

THE Imperial College of Science and Technology, a School of the University of London, is made up of the Royal College of Science, the Royal School of Mines and the City and Guilds (Engineering) College. It has occupied buildings in South Kensington since 1872. Its present number of students is just over two thousand, of whom some 1,300 are concerned with technology, mainly engineering.

In January 1953 the Government asked the College to raise its student number (then 1,650) to 3,000 by 1962. The national need for more highly trained scientists and engineers was urgent then and is more so today. Recent statistics have emphasised our deficiency in relation to the Soviet Union, where engineers at graduate level now leave Universities and Institutes at the rate of 60,000 per annum, compared with 22,000 in the U.S.A. and 3,000 here. For the purpose of the expansion the College was asked to plan on the basis of its taking over the island site, that is the rectangle south of Prince Consort Road, bounded by Exhibition Road, Queens Gate and Imperial Institute Road.

The decision that the expansion of the College should occur at South Kensington has been generally but not universally approved. Some critics have suggested that a move into the suburbs or the country would have been preferable. This alternative was thoroughly investigated by the College between 1951 and 1953 and, in the end, there was unanimity in favour of expanding in South Kensington. The worst fate which can befall a university institution is to be split for any substantial period between two sites which are far apart. If, therefore, the expansion was to take place outside South Kensington, it would have been essential for the College to give up its existing premises. The difficulty of finding a suitable site of adequate size in the suburbs or near London was very great. Moreover, to locate so large an institution in the country would have increased the capital cost enormously through the need to provide so much new residential accommodation. These were important reasons, but the decisive factors were that expansion in South Kensington enabled the College to retain and develop its close ties with the University, with the learned societies and professional institutions, and with the world of science, technology and industry. The decision, taken three years ago, was clearly right and has already led to the investment of nearly £1 million in new buildings on the site.

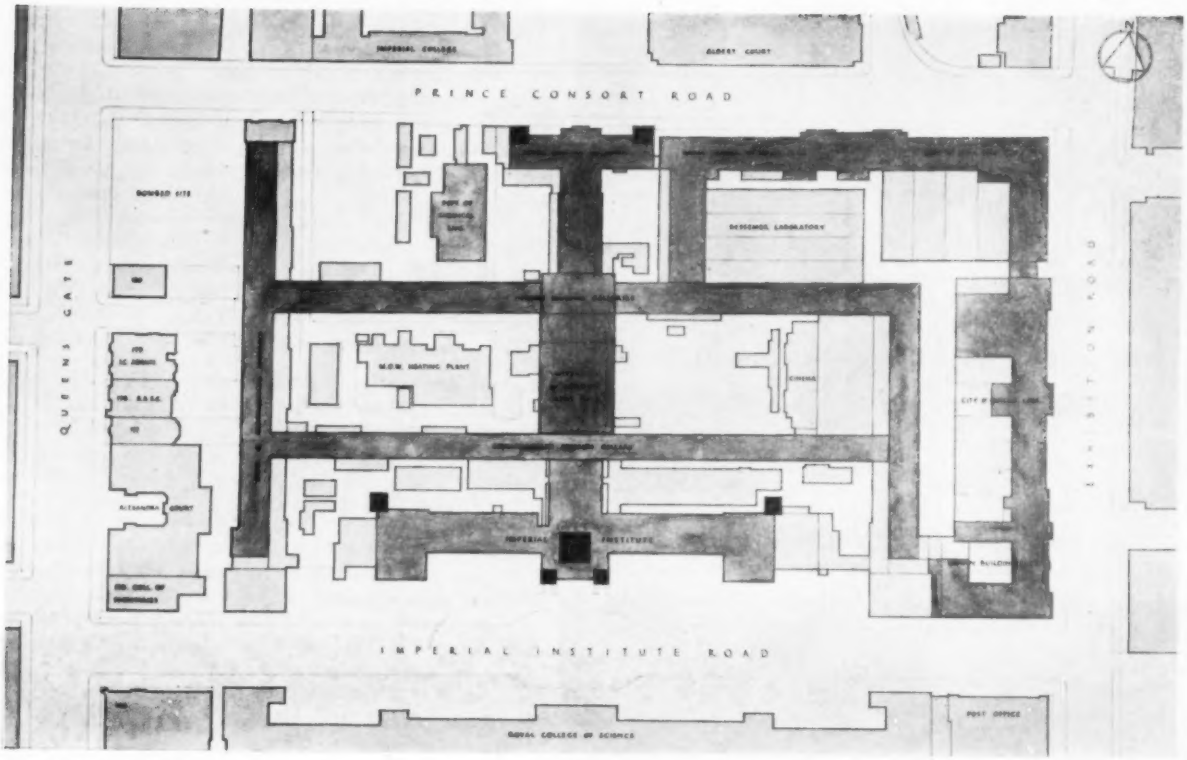
The is another reason for the College remaining and expanding in South Kensington. The surplus funds of the Great Exhibition of 1851 were invested in the purchase of the land which runs south from Kensington Gardens, on the frontage of which the Royal Albert Hall was subsequently built; the Commissioners for the 1851 Exhibition were charged with the duty of using their resources "to increase the means of Industrial Education and extend the Influence of Science and Art upon productive industry". The use of the island site by the College is clearly in line with this requirement and with the intentions of the prime mover in these matters, the Prince Consort, who was indeed the founder and first President of the College.

The Basis for the Building Plan

The College drew up the Academic Plan for its expansion in 1953. On the basis of this Plan it was calculated that the floor area required would be a little more than 1,800,000 sq ft gross (i.e. including corridors, lifts, staircases, and other similar space). This would give a provision of space per person of about 340 sq ft (gross) or about 500 sq ft per student. This representts an improvement on the crowded state of affairs in 1952/3, but is some way below the space available before the war (1938/39). Space requirements vary greatly according to technical equipment and these are average figures. The calculations also have to take account of the fact that postgraduates need more space than undergraduates, and that the College has the highest proportion of postgraduates of any College or University in the country. Of the total requirement, about 340,000 sq ft can be provided off the rectangle by adaptations to existing College buildings in the Beit quadrangle and the Royal College of Science building south of Imperial Institute Road. This leaves about 1,460,000 sq ft to be found on the island site itself.

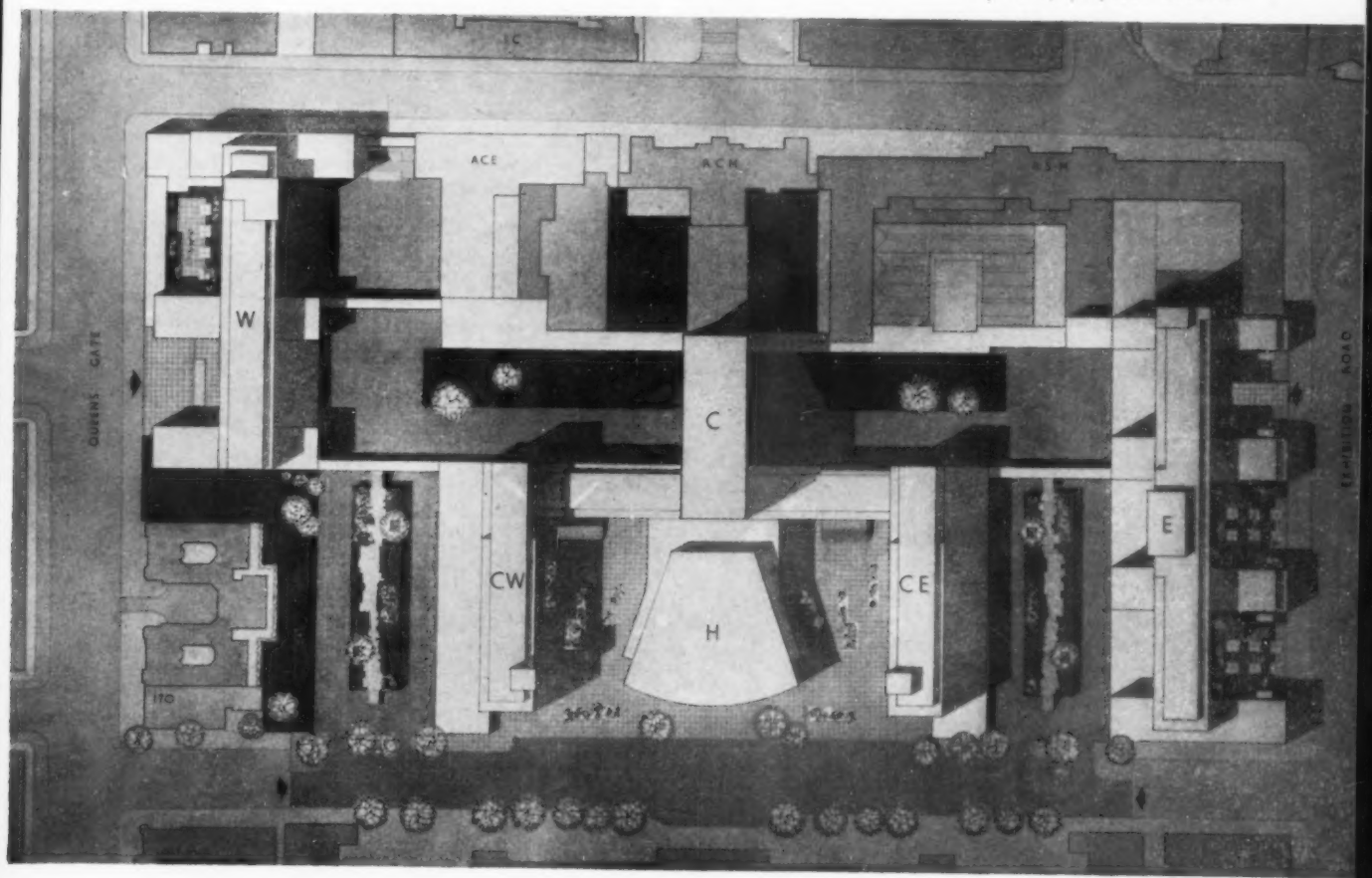
The space is to be used as follows: Very large require-

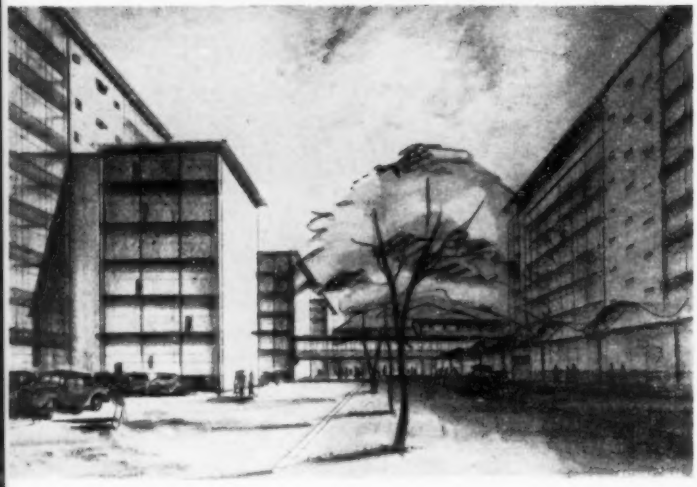
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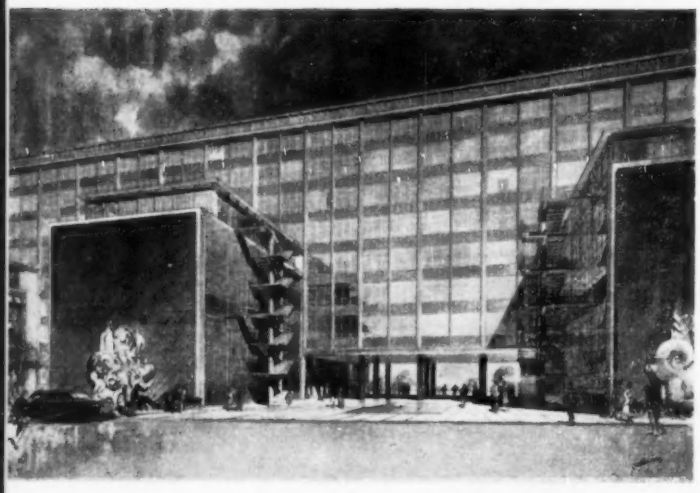
Site plan as existing.

Layout of proposed scheme.

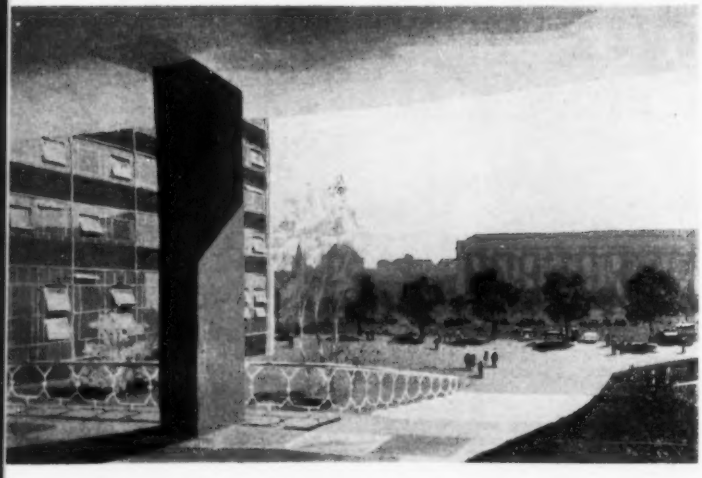




Early sketch from West Court looking north.



The Pedestrian Entrance from Exhibition Road.



Looking South to existing R.C.S. from Central Deck.

The Imperial College Scheme

Continued from p. 280

ments are needed for the Engineering Departments, whose total floor space will rise to about 750,000 sq ft. Science Departments, including their technological sub-departments, will rise to 500,000 sq ft and Mining Departments to 175,000 sq ft. The College's policy is to provide a central building which will contain the common rooms, refectories, libraries and similar units; also a Great Hall. It is clear that there will be no room for residential buildings on the island site; these are to go nearby. The whole conception aims at the provision in London of a College of Science and Technology second to none in the world.

There are certain limitations which have to be taken into account in the planning. First there are the normal town-planning requirements; the density of population, the angles of light between buildings, fire precautions, a sufficient area for circulation, and so on.

Next come certain special limitations: (1) It is essential that the College should be kept running during the total operation. (2) One of the largest existing buildings is more than 70 years old, and clearly near the end of its useful life; its demolition will have to be carried out as a carefully planned operation, with a progressive decantation of the departments concerned into new buildings or transit accommodation. (3) It has been decided to leave intact the Royal School of Mines building and the Goldsmiths' Extension of the City and Guilds College. (4) The Royal College of Music is to be left undisturbed. (5) The development of the south-western part of the site is obscure as it contains private residences not in the College's possession. Moreover, following a request from the Royal Fine Art Commission, in 1955, the College has undertaken to preserve on aesthetic grounds the Norman Shaw house at the junction of Queens Gate and Imperial Institute Road.

These are, in outline, the requirements which the College placed before its Architect and the limitations within which it has been necessary to work.

Messrs. Norman & Dawbarn were appointed Architects for the new building on the island site in 1953. Mr. Graham Dawbarn presented his plan for the island site at the end of that year and it was subsequently submitted to the University and the University Grants Committee. Detailed drawings have since been made of the buildings to be erected first. The plans have been submitted to the Royal Fine Art Commission, and the 1851 Commissioners. They are now before the Town Planning Committee of the London County Council.

The Site

The site, which is shown at the top of p. 281, is bounded by Prince Consort Road, Exhibition Road, Imperial Institute Road and Queens Gate. The level of Prince Consort Road to the north varies between eight and fifteen feet above that of Imperial Institute Road to the south; Exhibition Road and Queens Gate rise accordingly from south to north.

Three buildings, all adjoining the northern boundary of the site, are excluded from the new development: the Royal School of Mines and Goldsmiths Extensions (RSM); the Chemical Engineering building to which a new building—to be known as the Roderic Hill building—is now being added for that department and for Aeronautics (ACE) and, between the two, the Royal College of Music (RCM).

The Royal School of Mines and Goldsmiths Extension, to which a storey has recently been added, is providing essential accommodation and its removal cannot be contemplated in the foreseeable future. The Chemical Engineering building was erected before the war, the remainder of ACE is now nearing completion on foundations that were formed some years ago.

The Royal College of Music, which is between the two, is fulfilling a valuable function and has one of the best concert halls in London. The wings that project on either side of it would strictly limit the height and size of any new building on its site. In the distant future it may perhaps be possible to remove it and form a sunk garden on the axis of the steps from the Albert Hall with colonnades at its southern end opening up vistas beyond; if so, drastic treatment will be required to the wings on either side.

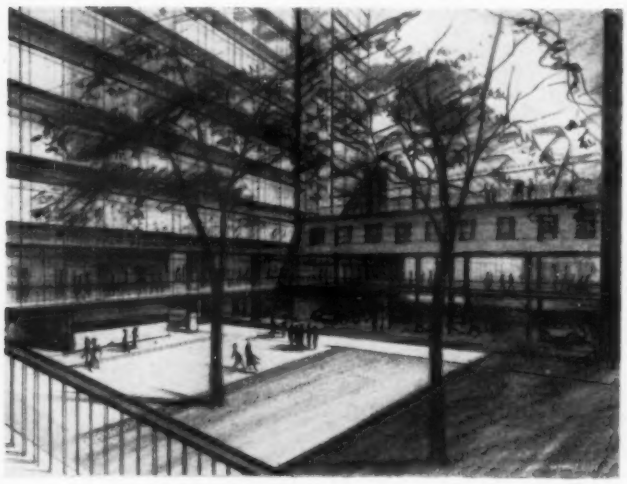
General Considerations

The academic requirements necessitate very large buildings. Owing to their uses they are, in fact, large in comparison with their population. Whilst ground space is invaluable in connection with heavy workshops and other technical needs, some of the buildings must, to achieve the required accommodation with a measure of expansion, be very high.

The object of Imperial College is not only to train scientists and technologists but to form a base for education in its broadest sense. This, in London, can best be fulfilled by the students mixing amongst themselves and the academic staff in debate, in committee, in common rooms and refectories, and in physical and mental recreation all within the site.

The scheme, to achieve its full purpose, should be gracious and open, with sun and air penetrating the buildings and the spaces between them, with vistas from without and within, with large courts, trees, lawns, sculpture and murals so as to create an environment that will bring pride and pleasure to the occupants and to the passers-by, with "movement" in the skylines and an avoidance of monotony and overshadowing

Early sketch of Central Block from west.



Further Considerations

The Royal College of Science building (RCS) which is to the south of Imperial Institute Road is part of Imperial College and should be brought into the scheme.

Some four or five thousand people will occupy the buildings and others will visit them. There must be adequate provision for parking and for vehicle circulation as independent as possible from pedestrian movement.

The buildings themselves should express their purpose and should serve future as well as present needs. They should be so flexible as to permit, over the years, changes in user and a measure of expansion within the scope of the scheme. These desiderata require the application of the most recent advances in structural and mechanical design and in the proper use of contemporary materials.

General Layout and Orientation

The site lies between relatively wide flanking roads and a basically symmetrical layout has been found most suitable. The layout consists essentially of five "spine" blocks, all running from north to south.

Four of these blocks—E, CE, CW, W—are 120 feet high. The spines of E and W are set back some 80 feet from Exhibition Road and Queens Gate respectively with, between spines and roads, a series of lower spurs separated by gardens and paved terraces. The central block—C—is 200 feet high with low wings on either side and, at its southern end, a Great Hall.

This orientation, coupled with the wide spacing of the high blocks, permits maximum penetration of sun and air, and provides vistas from south to north. The spines of blocks E and CE, and of blocks CW and W are over 200 feet apart; the central block, C, looks east and west down open spaces 120 feet wide.

Circulation

The rise of the flanking roads assists the segregation of vehicles from pedestrians. All vehicles approaching the College enter Imperial Institute Road, which it is hoped will be absorbed as a Precinct as shown on the layout drawing and model. They then circulate through the courts and can make use of the four traffic lanes that pass under Block C. Parking is at the same level; partly in the open and partly under terraces and decks.

Pedestrians enter from Exhibition Road and from Queens Gate by terraces some 85 feet wide. They either enter these blocks or pass under them to emerge on to Decks above covered parking, facing the central block.

The Imperial College Scheme

From these Decks, bridges seventeen feet above the traffic flow lead to blocks CE and CW and thence on to covered Decks which join a central Concourse and also open on to the terraces on either side of the Great Hall.

Vistas

The site has been opened-up to provide a variety of views and vistas. People travelling north along Exhibition Road, after passing two gardens, look through the Pedestrian entrance under the spine of block E to the Central block over 500 feet away.

From Prince Consort Road, broad steps just west of ACE look south past the west bridge to the Precinct; one day a corresponding vista may be possible through the Royal School of Mines. If the Royal College of Music is ever pulled down and the site turned into a garden there will be views into the east and west courts on either side of the bastion formed by the north end of the central block—a suitable place for sculptural adornment.

Use of Buildings

Blocks E, CE, CW and W are all devoted to teaching and research. The Nucleus, composed of the central block with its wings and Great Hall, contains those elements which distinguish University life from Technical training. The greatest stress is laid on the fact that these are readily accessible and that Libraries, Reading rooms, Administration, Committee rooms, Debating halls and facilities for Physical Recreation adjoin Common rooms, Cafeteria and Refectories. The intimate link between the Departments and Nucleus might later be extended to the Royal College of Science by means of bridges over the Precinct and by covered ways down the edges of the low workships which are part of CE and CW.

The Nucleus and the Great Hall

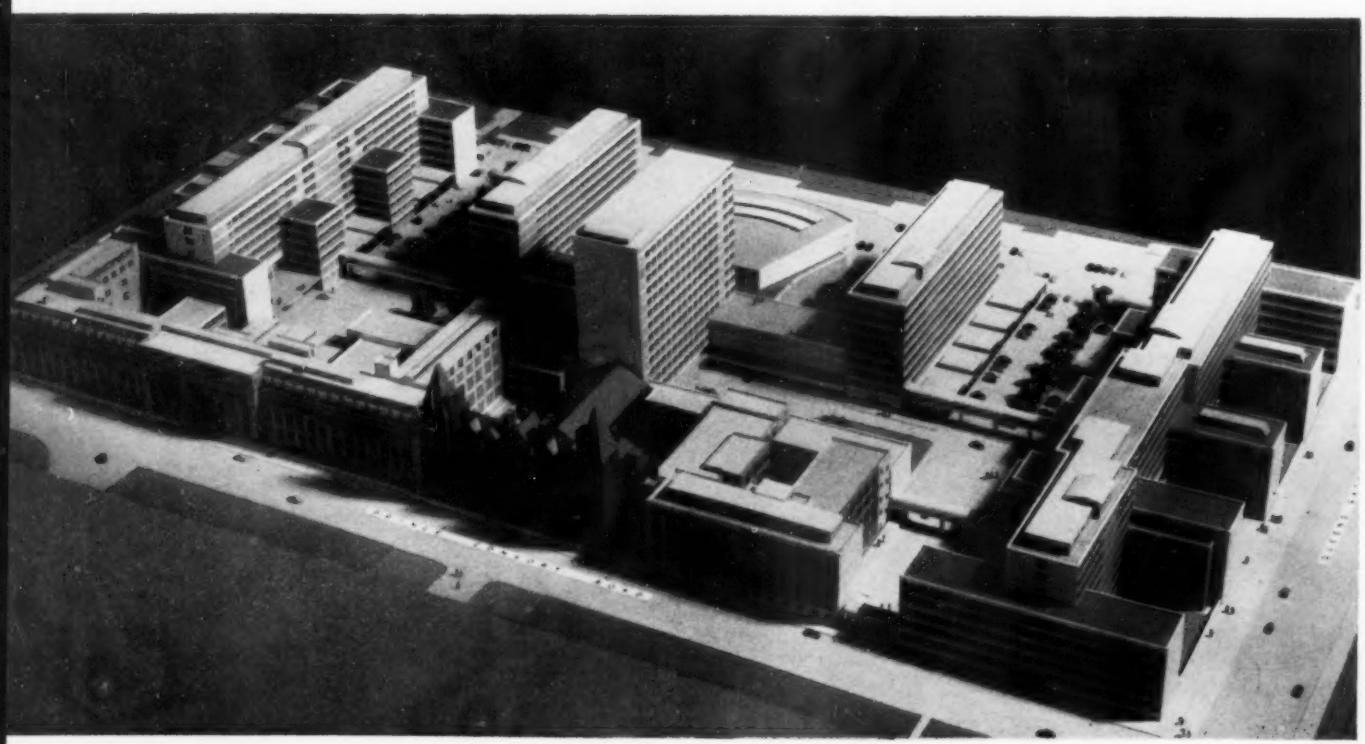
The Nucleus may well serve three or four thousand people at one time. The covered Decks under the wings (each some 55 feet by 120 feet) contain shops and connect directly with a large Common room and with a central Concourse within which lifts, escalators and staircases lead to all the components mentioned above. Cloak rooms and sanitary accommodation are necessarily included on a considerable scale; a number of changing rooms and facilities for physical recreation are placed on the lower levels.

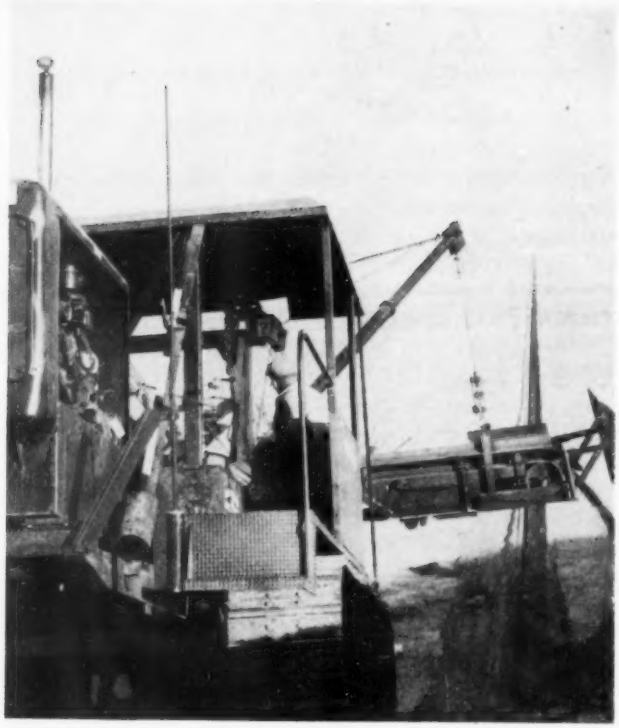
The Great Hall is connected with the central block at each of its several levels, but it also has entrances off the Precinct and off the terraces to east and west. These terraces are open to the south and are paved for pedestrian use with groups of flowers and shrubs. They rise, by a slight gradient culminating in broad steps, from the vehicle level of the Precinct to the pedestrian level of the Covered Decks. The Hall can be used either independently or as part of the College.

The Evolution of the Scheme

The Model represents a basic conception. This conception still holds, but is subject to constant analysis, development and refinement. The drawings and sketches which accompany this note express different periods of the evolution and some or all will be amended.

Original Model: view from north.





Contractors Plant - 1

This is the fifteenth article of the series which are appearing once a month. The next article will deal with road finishing and surfacing plant.

Excavation and Muckshifting

THIS article is concerned with choosing the right plant for the job. The highest degree of efficiency depends as much on the selection and placing of machinery as it does on correctly assessing the number of men required, or the quantity, delivery and placing of materials, or having a preconceived plan of construction. So, whether it be the building of 2-storey houses, multi-storey blocks, offices, factories, or some civil engineering project, the correct use of plant and automatic tools means all the difference between a low-cost job and an uneconomic one.

It is equally important for both architect and builder to appreciate this fact. From the architect's point of view it does not mean he is restricted aesthetically, but, for example, with the use of such an implement as a tower crane he can incorporate into the design of a building, without any loss of dignity or proportion, precast units of a size rarely permissible in prewar days.

From the builder's point of view there follows a wealth of new methods for doing old tasks which lose nothing in the way of quality or finish, although the same operation may take half the time and save manpower.

For convenience—and it is suggested that when assessing plant requirements all jobs should be looked at in such a way—it is a simple enough matter to think in terms of what is needed for (a) ground clearance and below surface work; (b) ground level work; and (c) above ground level work. In practice it will be found that some machines suit all these categories, either with or without minor adaptations.

In the first category can be placed bulldozers, excavators, power shovels, trenchers, pneumatic drills and spades, chain saws and pumps. Pneumatic equipment invariably needs independent power units, whilst the remainder carry their diesel or petrol engine with them. (Of late it has been possible to obtain electrically-powered pumps.)

Excavators, power shovels, trenchers and bulldozers generally are track machines though all but the last can now be had equipped with pneumatic tyres. According to the nature of the ground and weather conditions excavators, in particular, may well require a "bed" of digger mats in order to operate without disaster. The fact that they can "walk" the bed ahead of them as they go is an asset and involves no great loss of productive time where the alternative is a bogged-down machine.

In the second category, for use at ground level, we can include fork-lift trucks, dumpers, rollers, mixers, weigh-batchers or weigh-gear for mixers, cement silos, handscrapers, concreting booms, tamper-vibrators, generators, power saws, power bar-benders and mechanical punners.

The word "need" has been used in connection with power-operated or semi-automatic plant, but it is realised that the capital resources of thousands of builders throughout the country will not allow them to purchase and keep in constant use many of the items of equipment referred to. Such concerns should so organise their affairs that they can take the fullest advantage of expensive plant by hiring. The Contractors' Plant Association, also the Building Research Station, exists in part for the benefit of those who may require advice as to the most suitable plant for the job they are about to embark upon; and since last year the N.F.B.T.E. has provided an advisory service for its members which, amongst other matters, will go into the question of what plant to use, its disposition on site and the number of operatives required.

Above: Cleveland 320 Trencher distributed by J. Blackwood Hodge & Co. Ltd.

Contractors Plant I

Builders and contractors are becoming increasingly aware of the usefulness of the Plant Hire system. It is a fact that the largest proportion of plant let out on hire goes to the major contracting firms of this country. Their accounts are as it were the "bread and butter" of the plant hire firms.

These firms hold large quantities of all types of plant in stock, but availability is of course governed by "supply and demand". Since it is to the advantage of the owners to keep plant in a fit state of repair so as to be readily available for contractors' demands, it follows that they must have carefully drawn up conditions of hire. We do not propose to lay out these conditions in detail, only to give a brief idea of the terms which are available to the hirer.

It is usual for a rate to be charged for the hire of the machine alone and various extras are quoted at the same time, such as insurance, operators' wages, holiday pay and national insurance, fuel and transport. The total costs may be quoted as a lump sum, if desired. Operators are usually sent with the larger items of plant and the governing factor here is the value of the plant. Most of the larger hire firms supply their own transport but the cost of this has to be borne by the hirer.

The term of hire is usually calculated from date of leaving until return to owner's depot, but an allowance is sometimes made for travelling time. The hirer, who is responsible for loss or damage to the plant and its eventual return in good condition, should notify the owner at once should it be received in questionable condition.

Where an operator is supplied, the hirer should not allow any other person to operate the plant without the consent of the owner. The operator becomes the servant of the hirer for the duration of the hire term and works under his instructions entirely. The plant is not available for sub-letting unless special arrangements are made.

The hire firms usually service and inspect their property during the contract and carry out tests, adjustments, repair or replacement. Breakdown of the plant should be reported at once. The only rebate allowances usually made by the owner are for stoppages due to breakdown of the plant and he will not acknowledge or admit claims due to circumstances beyond his control.

Plant is insured by the owner and the hirer automatically inherits the terms and conditions of the policy, which also covers third party risks. Dumpers are not always insured for use on public roads unless special arrangements are made.

A plant insurance policy does not usually cover damage to the hirer's own property, damage to property handled by the plant, damage to underground pipes and cables, damage to bridges, viaducts or roads, etc., caused by vibration or weight of the plant, liability arising from overloading of the plant or when equipment not supplied by the owner is used with the plant, and death or injury to the hirer or his employees. Drivers and operators can be covered by an Employer's liability policy which jointly indemnifies owner and hirer against Common Law risks. Plant other than dumpers is not insured against damage other than fire and explosion. These risks are usually covered by an ordinary fire policy extended to include explosion risks. The hirer has to indemnify the owner and his employees against all claims however caused (subject to any rights he may have under the insurances) and it is in the hirer's interest to cover this risk in a policy of his own.

A large number of firms now operate the plant hire system and many of these are members of the Contractors' Plant Association, but some of the larger organisations, for instance, George Cohen, Sons & Co. Ltd. (The 600 Group of Companies) and Greenham's do not subscribe to this Association.

Approximate Rates of Hire per 44 hour Week

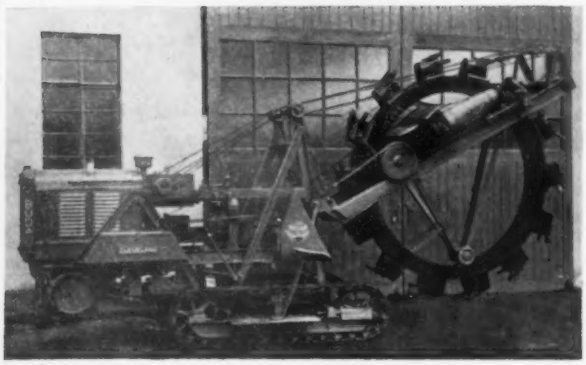
Crane Grab Buckets	½—¾ yd	£3 5 0	1 yd	£4 5 0
Crawler Excavators	¾ cu yd	£26 10 0	⅞ cu yd	£28 10 0
(Additional equipments extra)	1 cu yd	£34 15 0	1½ cu yd	£40 10 0
	1¾ cu yd	£48 0 0	2 cu yd	£54 0 0
	1¼ cu yd	£71 0 0		
Euclid Dump Wagons	*Bottom Dump type* 13 *cu yd* £126; *Rear Dump type* 9·7 *cu yd* £115 *Loader* £203			
Dumpers (petrol)	1 cu yd	£10 10 0	2 cu yd	£16 15 0
	2½ cu yd	£19 0 0	3 cu yd	£21 15 0
Dumpers (diesel)	3 cu yd	£24 5 0	4½ cu yd	£39 7 6
	6½ cu yd	£75 15 0		
High Lift Shovels	*Petrol and T.V.O.* £18 7 6		*Diesel*	£21 5 0
Mechanical Trenchers (diggers)	*Up to* 20 *h.p.* £21 7 6; 40 *to* 49·9 *h.p.* £36 10 0; 50 *h.p. andover* £52 12 6			
Tractors (Crawler) with Scraper	£45 *to* £140 *according to size.*			
Tractors (Crawler) with Dozers	*From* £60 *to* £160 *according to size.*			

The following abbreviations are used in the tables on pages 287 *to* 296: *DR—Dumping Radius, DH—Dumping Height, CH—Cutting Height: CR—Cutting Radius, TR—Tail Radius: E—Equipment only.*

Trenchers

Supplier	Model	Overall Dimensions L x W x H	Power Unit	Width of Trench	Depth of Trench	Approximate Weight	Remarks
JOHN ALLEN & SONS (OXFORD) LTD.	16-60 Super Duty	33′ 0″ x 15′ 7½″ x 12′ 3″ Width folded 8′9″	Dorman 50 b.h.p. or Gardner 5LW diesel	16″-30″ standard but up to 60″	14′ 0″ max.	15 Tons	Digging speeds: 5 speeds standard 4.38″ to 35″ per min. Change of sprockets gives twenty speeds up to 169″ per min. Conveyor mechanically operated through the machine in 20-25 seconds. Traction by full caterpillar
	14/30	31′ 8″ x 6′ 6″ x 9′ 4″	Gardner 50 b.h.p. or Dorman 48 b.h.p. diesel	14″-30″	8′ 6″ max.	11 Tons	Boom raised hydraulically. Digging speeds: 5 speeds from 11.7 to 93.7″ per min. Bucket sizes, 14, 18, and 24″ but 30″ trenches possible
	12-21 Super duty	26′ 9″ x 5′ 11½″ x 7′ 3″	Dorman 40 b.h.p. diesel or Gardner 40 b.h.p.	13″-21″	6′ 0″ max.	7½ Tons	Boom hydraulically operated. Digging speeds: 4 standard from 31½ to 90″ per min. Traction by full caterpillar. This machine and the two above can dig in reverse
AVELING-BARFORD LTD.	Trench Cutting machine	13′ 3″ x 7′ 9″ x 7′ 1″	8 b.h.p. petrol or 10 b.h.p. diesel	11″ or 18″	4′ 0″	3T 2cwt max.	Machine is self hauling, a winch, mounted on the front, winds in cable which is anchored 300′ ahead Digging speeds: 25 to 175 f.p.h.
J. BLACKWOOD HODGE & CO. LTD. (Distributors for The Cleveland Trencher Co. Cleveland, 17, Ohio, U.S.A.)	Cleveland 92 Baby digger	19′ 0″ x 8′ 10″ x 8′ 10″	36 h.p. petrol or diesel	10″-20″	5′ 0″ max.	4T 9cwt	Traction Cleveland crawler. Speed approx. 2 m.p.h. Teamed for road travel with Cleveland T-5 trailer. Digging speeds 6″ to 30′ per min.
	Cleveland 95 Baby digger	21′ 6″ x 7′ 11″ x 9′ 5″	50 h.p. petrol or diesel	11″-24″	5′ 6″ max.	4T 18cwt	Traction by crawler. Road speed 2½ m.p.h. Digging speeds: 5″ to 29′ per min. Digging wheel has 14 buckets
	Cleveland 110	22′ 0″ x 7′ 11″ x 9′ 5″	50 h.p. petrol or diesel	13″-24″	5′ 6″ max.	5T 7cwt	as above
	Cleveland 140	23′ 0″ x 8′ 10″ x 9′ 5″	As above	19½″-30″	5′ 6″ max.	6T 10cwt	as above
	Cleveland 240	24′ 6″ x 10′ 4″ x 8′ 9″	70 h.p. petrol or diesel	20″-36″	6′ 3″ max.	9T 3cwt	Traction by crawler. Road speed: 2.7 m.p.h. Digging speeds: 6″ to 37′ per min. Digging wheel has 15 buckets
	Cleveland 320	34′ 8″″ x 16′ 0″ x 12″ 2′	98 h.p. diesel	28″-52″	7′ 6″ max.	16T 1cwt	Traction by crawler. Road speed: 2½ m.p.h. Digging speeds: 6″ to 50′ per min. Digging wheel has 15 buckets
ROTARY HOES LTD.	The Howard	18′ 2″ (20′ 3″ with pipe layer) x 6′ 7″ x 10′ 2½″	Fordson Major diesel tractor	7″-9″	3′ 6″	4T 14cwt	Pipe laying attachment available which lays pipe whilst trenching takes place. Digger hydraulically operated. Speed of work: 20 chains per hour
WHITLOCK BROS. LTD.	Dinkum Digger	Closed: 6′ 0″ x 4′ 10″ x 9′ 1″ Open: 13′ 0″ x 4′ 10″ x 11′ 2″	Fordson Major diesel tractor or Platypus PD2 Perkins 34 b.h.p. diesel	10″-36″	9′ 0″ max.	13½cwt (not including tractor)	Also used as loader or bulldozer. Buckets 18 and 24″ with capacities of 3.75 and 5.5 cu ft (struck)





Left: The Howard by Rotary Hoes Ltd.

Right: The Dinkum Digger by Whitlock Bros. Ltd.

Left: The Cleveland 95 through J. Blackwood Hodge & Co. Ltd.



Excavators, Shovels and Grabs

Supplier	Model	Type	Overall Dimensions L x W x H	Power Unit etc.	Bucket Size	Approximate Weight	Remarks
JOHN ALLEN & SONS (OXFORD) LTD.	Atos Mk III	Shovel or trench hoe	18′ 0″ x 7′ 11″ x 5′ 9″	Hydraulic from P.T.D.	18″, 24″, 10″	25cwt	Max. depth of cut: 8′ 6″. Max. loading height 12′ 9″. Attached by drawbar to medium size agricultural tractor.
	Dorset	Hydraulic excavator	24′ 6″ x 7′ 6″ x 8′ 9″	David Brown 20 b.h.p. petrol /paraffin	Shovel: 24″ Trench: 10″, 18″ & 24″	4T 12cwt	Chassis: 5 ton short wheelbase lorry. Depth of trenching 8′ 6″.
	Super Duty Model K	Mobile Excavator	Chassis: 19′ 9″ x 7′ 11″ x 9′ 6″	Gardner diesel 68 b.h.p.	Shovel: ½ cu yd Dragline, clamshell and trench hoe: ⅜ cu yd	With shovel 12T 1cwt	Shovel: Boom 15′ 3″. Max. D.H. between 35 & 60 deg.—10′ 6″ to 16′ 6″, D. R. 18′ 9″ to 14′ 4″; digging depths 3′ 2″ to 1′, radius 21′ 4″ to 19′ 4″. Trench hoe: Boom 14′. Max. dig 11′, radius 24′ Bucket width 29″ Dragline: with 25′ boom at 45 deg., operating radius 20′, D.H. 14′, dig 15′. Also used as lifting & grab crane skimmer and pile-driver.
AVELING-BARFORD LTD.	Front end Loader	Loading shovel	17′ 3″ x 6′ 10½″ x 11′ 5″	Fordson Major diesel or petrol 42.5 b.h.p.	36″, 51″ and 66″	4T 18cwt	Buckets interchangeable. Maximum loading height 8′ 7″. Controlled by cable operation. Max. forward travelling speed: 10.75 m.p.h.
J. C. BAMFORD	J C B	Hydraulic excavator and major loader	22′ 0″ x 6′ 6″ x 15′ 0″	Fordson Major tractor	⅜ cu yd for loader and 3, 5½, 7½, and 13 for excavator	4T 7¾cwt	Excavator: Boom can be slewed and will dig over a full 180 deg. and height, depth and reach are respectively 9′ 6″, 11′ and 16′. Loader: Max. D.H. 8′ Also used with bulldozer and crane attachments.
J. BLACKWOOD HODGE & CO. LTD. (Distributors for the Marion Power Shovel Co., Marion, Ohio, U.S.A. and The Clark Equipment Co., Bernton Harbor, Michigan, U.S.A.)	Marion 33M also many similar machines with bigger performance	All purpose excavator	Crawler: 11′ 0″ x 9′ 10″ w	G.M. 3-71 diesel, petrol 40 h.p. electric	Shovel: ½ cu yd Dragline: 1 cu yd also	Shovel: 21T Dragline: 20T 3cwt	Shovel: Boom 18′ Max. D.H. 16′ 6″ radius 23′ 6″, C.H. 23′ 3″, radius 26′ 0″. Dragline: Boom 35′ to 55′ Max. D.H. 27′ 6″, radius 50′. Also used as crane, grab, backhoe, loader and pile-driver.
	Marion 83-M	Shovel or 60 Ton crane	Crawler mounting: 14′ 10″ x 12′ 3″ with 12′0″ high gantry	Diesel: Buda Electric: 100 h.p.	Shovel: 2 cu yd Dragline: 2-2½ cu yd	Shovel: 55T 3cwt Dragline: 59T 16½cwt	Designed for quick and easy conversion in the field. Has 24′ 8″ boom for shovel service and crane boom lengths up to 120′; pull shovel digs to a max. depth 26′ 9″; clamshell 2½ cu yd
	Marion 93M	(a) Shovel, (b) dragline, crane clamshell or loader	Crawler-mounting: 15′ 8″ x 11′ 11″ with 15′ 6″ high gantry	Diesel: Caterpillar Electric: optional	(a) 2½-3 cu yd (b) 1½-3 cu yd	(a): 71T 17½ cwt (b): 64T 6cwt	Has 26′ boom for shovel service and 60 to 80′ for dragline. Also available electric Ward-Leonard control
	Marion 101M	As above	As above	Diesel: Cummins. Electric: 150 h.p.	Shovel: 3 cu yd Dragline 2½-3½ cu yd	(a) 79T 9cwt (b) 83T 10cwt	As above.
	Marion 111M.	As above	Crawler mounting 16′ 0″ x 15′ 4″	Ward Leonard Electric	Shovel: 4 cu yd Dragline: 3-4½ cu yd	(a): 121T 9cwt (b): 123T 15cwt	Has 33′ boom for shovel and 80′ to 110′ for dragline
	Marion 151M	(a) Shovel, (b) dragline	19′ 9″ x 17′ 4″ 23′9″ high gantry	Ward Leonard Electric	Shovel: 7 cu yd Dragline: 4-8 cu yd	(a): 195T 2cwt (b): 185T 5cwt	Heavy duty machine convertible to dragline. Boom length 38′ for shovel service and 80′ to 120′ for dragline.
	Marion 191M	Shovel	Crawler mounting: 26′ 0″ x 22′9″ with 32′ 4″ high gantry	M.G. Electric	10 cu yd	317 Tons	Boom length is 43′ 8″. Max. dumping height 31′. Max. cutting height: 46′ and cutting radius 56′.
	Marion 362	(a) Shovel, (b) dragline, also clamshell crane or pull shovel	Crawler mounting: 13′4″ x 11′9″ with 12′0″ gantry but 17′ 0″ for dragline	Diesel: Caterpillar D-13000. Electric: 75 h.p	(a): 1¾ cu yd (b): 1¼-2 cu yd	(a): 44T 17cwt (b): 40T 3¼cwt	Boom length for shovel 23′ and for dragline 50′ to 70′.
	Marion 4161	(a) Shovel, (b) dragline	Crawler mounting: 19′9″ x 17′0″ with 23′ 9″ high gantry	Ward Leonard electric	(a): 6 cu yd (b): 3½-7 cu yd	(a): 192 Tons (b): 178T 11cwt	Incorporates the Marion air operated controls. Boom length for shovel 38′ and for dragline 80′ to 120′.
	Marion 7400	Walking dragline	54′ 0″ x 44′ 6″ with 58′6″ high gantry	Diesel: Cooper Bessemer 760 h.p. Electric: 700 h.p.	10, 12 or 13 cu yd	551T 7cwt	Max. length of boom: 200′. Max. dumping radius: 190′. Max. dumping height: 81′ and digging depth 102′ 3″.
	Michigan 75	Tractor shovel	16′ 10″ long x 6′3″ high	80 h.p.	1 cu yd	—	Will excavate, load or bulldoze. Max. working speed 8 m.p.h and travel speed 26 m.p.h.
	Michigan 125	Tractor shovel	18′ 2″ long x 7½″ high	—	1⅝ cu yd	—	As above
	Michigan 175	Tractor shovel	20′ 2″ long x 7′10″ high	133 h.p.	2¼ cu yd	10T 15cwt	As above.
BLAW KNOX LTD.	BK 50	Multi purpose excavator	10′ 0″ (Crawler L) with 7′ 6″ T.R. x 8′ 4″ x 10′ 0″	Perkins diesel 50 b.h.p.	½ cu yd	Shovel: 13T 17½ cwt Dragline: 13T 4 cwt	Drag Shovel: Boom 15′ 8½″. Max. D.H. 13′ 6″, Max. dig 15′ 9″. Shovel: Boom 15′ 9″ Max. D.H. 16′ 0″ Max. dig 4′ 2½″ Max. D.R. 17′ 9″ Dragline: Boom 30′ or 35′ Max dig. for 35′ boom at 45 deg. 11′ 6″ and 19′ at 30 deg. D.H. 20′ 6″ and 13′ D.R. 27′ 6″ and 33′ and CR. 39′ 6″ and 42′. Also used as skimmer, lift or grab, crane and pile-driver.

FIRMS MENTIONED IN THE TABLES

JOHN ALLEN & SONS (OXFORD) LTD.,
Cowley, Oxford. Oxford 77155

AVELING-BARFORD LTD.,
Invicta Works, Grantham, Lincs. Grantham 1091

J. C. BAMFORD,
Lakeside Works, Rocester, nr. Uttoxeter, Staffs. Rocester 371

BENFORD LTD.,
The Cape, Warwick. Warwick 1170

BIRTLEY CO. LTD.,
Birtley, Co. Durham. Birtley 110.

J. BLACKWOOD HODGE & CO. LTD.,
25 Berkeley Square, London, W.1. Mayfair 9090

BLAW KNOX LTD.,
90-94 Brompton Road, S.W.3. Kensington 5151

E. BOYDELL & CO. LTD.,
Elsinore Road, Old Trafford, Manchester 16. Trafford Park 1641

W. E. BRAY & CO. LTD.,
Faggs Road, Feltham, Middx. Feltham 3471

CHASESIDE ENGINEERING CO. LTD.,
Station Works, Hertford. Hertford 3113

ERNEST DOE & SONS LTD.,
Industrial Division, Ulting, Maldon, Essex. Hatfield Peverel 311

EUCLID (GREAT BRITAIN) LTD.,
Newhouse Industrial Estate, Lanarkshire, Scotland. Newhouse 651

GEORGE FOWELL LTD.,
Newton Street, Birmingham, 4. Central 1330

HANOMAG CRAWLER TRACTORS LTD.,
St. Albans Road, Hatfield, Herts. Hatfield 3026

THE INTERNATIONAL HARVESTER CO. OF GREAT BRITAIN LTD.,
Harvester House, 259 City Road, E.C.1. Clerkenwell 8422

THE LINER CONCRETE MACHINERY CO. LTD.,
P.O. Box No. 12, Park Road, Gateshead 8. Gateshead 72501

MARSHALL SONS & CO. LTD.,
Britannia Works, Gainsborough. Gainsborough 2301

MOTOR RAIL LTD.,
Simplex Works, Bedford. Bedford 4521

FRED MYERS TRACTORS & EQUIPMENT CO.,
4 Tilney Street, Park Lane, W.1. Grosvenor 7233

NEWTON CHAMBERS & CO. LTD.,
Thorncliffe, nr. Sheffield. Ecclesfield 3171

R. PRATT LTD.,
268-270 High Street, Sutton, Surrey. Vigilant 4456

PRIESTMAN BROS. LTD.,
Holderness Engineering Works, Hull. Hull 31777

RANSOMES & RAPIER LTD.,
Waterside Works, Ipswich, Suffolk. Ipswich 2143

ROTARY HOES LTD.,
West Horndon, Essex. Herongate 361

ROAD MACHINES (DRAYTON) LTD.,
Horton Parade, West Drayton, Middx. West Drayton 3221

RUSTON-BUCYRUS LTD.,
Excavator Works, Lincoln. Lincoln 640

H. A. SAUNDERS LTD.,
Industrial Tractor Division, 836-842 High Road, North Finchley, N.12. Hillside 5272

SKYHI HEAVY DUTY LOADERS LTD.,
Power Road, Chiswick, W.4. Chiswick 1668

THOS. SMITH & SONS (RODLEY) LTD.,
Crane and Excavator Works, Rodley, Leeds. Pudsey 2844

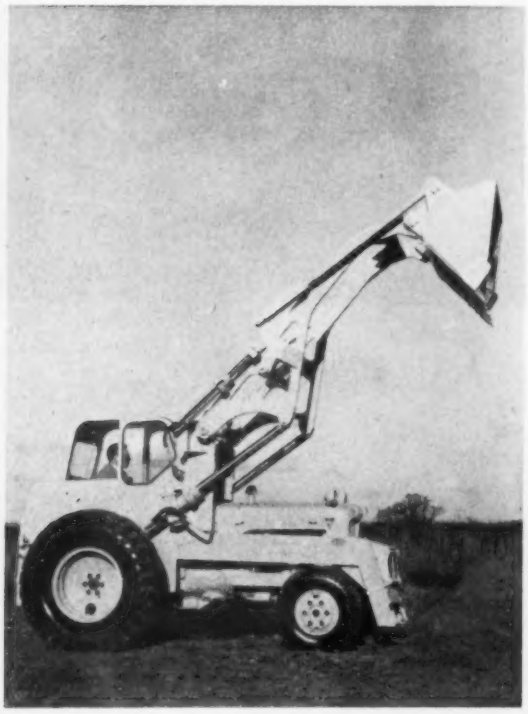
THWAITES AGRICULTURAL ENGINEERING CO. LTD.,
Welsh Road Works, Cubbington, Leamington Spa, Warwick. Leamington Spa 3089

TRACTORS (LONDON) LTD.,
The White House, Bentley Heath, Barnet, Herts. Barnet 9166

F. E. WEATHERILL LTD.,
Tewin Road, Welwyn Garden City, Herts. Welwyn Garden 4221

WHITLOCK BROS. LTD.,
Great Yeldham, Essex. Great Yeldham 305

Shovels





The Loadmaster by Chaseside Engineering Co. Ltd.

No. 2 HCR Loader by F. E. Weatherill Ltd.

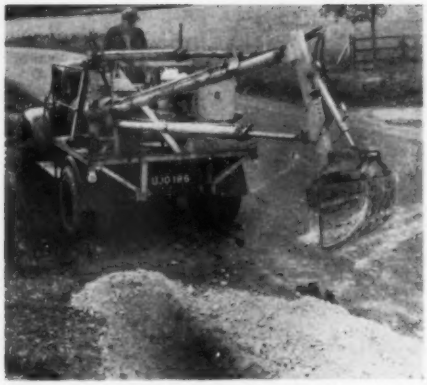
Excavators, Shovels and Grabs (continued)

Supplier	Model	Type	Overall Dimensions L x W x H	Power Unit etc.	Bucket Size	Approximate Weight	Remarks
E. BOYDELL & CO. LTD.	Muir-Hill 2-WL	Hydraulic Loader	17′ 11½″ x 6′ 8″ x 7′ 8½″	42 b.h.p. diesel	Standard : 1 cu yd Quarry : ¾ cu yd	4T 16cwt	Various interchangeable buckets available. Extra attachments 1 ton hook, 25 cwt crane, light dozer blade and bucket teeth.
W. E. BRAY & CO. LTD.	Dualoader	Overhead and front end loader	15′ 2″ x 5′ 8½″ x 17′ 0″ (i.e. max. bucket height)	Fordson Major, petrol, TVO or diesel	¾ cu yd	6T 15cwt	D.H. 9′ 0″ Forward reach 1′ 5″. Rear reach 2′ 0″. Dozer blade and snowplough available.
	(a) Hydra-loader and (b) Hyaloader	Hydraulic Loaders	(a) 15′ 1″ x 6′ 10″ x 6′ 10″ (b) 17′ 9″ x 6′ 10″ x 6′ 10″	as above	.46, ½, ¾, 1, 1¼ and 2 cu yds	4T 15¼cwt	Max. D.H. (a) 9′ (b) 11′. Max. depth of cut 6″. The hyaloader has a lengthened mainboom to give the extra height.
CHASESIDE ENGINEERING CO. LTD.	Loadmaster 500	Hydraulic loading shovel	11′ 7″ x 6′ 11″ x 8′ 3″	Perkins L4 Diesel 62 b.h.p. and Fordson 44 b.h.p. diesel	From ⅜ to 2 cu yd and 3′ 6″ to 8′ 0″ wide	5T 7½cwt	Max. dig: 6″. Max. loading height 11′ 1″. Available detachable scoop teeth, bulldozer blade, crane hook and fork lift truck attachments.
	Loadmaster 600	as above	13′ 6″ x 6′ 1″ x 8′ 6″	As above, also petrol and VO.	as above	4T 19½cwt	as above.
ERNEST DOE & SONS LTD. (Sole concessionaires)	ABS Universal U25 Domobile	Universal excavator	15′ 8″ x 7′ 6″ x 9′ 5″ (excluding boom)	55 h.p. Ford diesel	¾ cu yd	6½ Tons	Face shovel, digging height 12′ 1″ D.H. 7′ 2″. Backaster or drag shovel deep digging reach to 12′ and height 14′ 7″. Dragline has deep digging reach of 16′ 7″ and Jib 27′ 5″. Also crane with 3½ tons capacity at 10′ radius with 20′ to 30′ jib.
INTERNATIONAL HARVESTER CO. OF GREAT BRITAIN LTD.	Anthony	Loader-dozer	13′ 11½″ x 6′ 6″ x 7′ 4″	BTD6 diesel and BT6 distillate crawlers	¾ cu yd width 5′ 6½″	1T 17½cwt Loader 7 cwt dozer blade	Can be converted from loader to dozer in 10 minutes. Bucket and blade have 10″ dig. Dozer blade: 8′ 6″ x 1′ 10″.
	Drott skid shovel model B6-K3	Hydraulic shovel	12′ 2″ x 5′ 8″ x 4′ 11½″	BTD6 diesel crawler	Standard : 1½ cu yd Heavy duty: ¾ cu yd	2T 1qr.	Can be converted to bulldozer, bullclam shovel and clamshell. Max. depth as shovel 11″, lifting capacity 3,000 lbs. loading height 9′ 11″.
	Model 9K3	as above	13′ 11″ L x 6′ 6″W	TD9 diesel crawler	1¼ cu yd	2T 19½cwt	As before, but 12″, 4,000 lb. 10′ 8″.
	Model 14K3	as above	15′ 3″L x 8′ 0″W	TD14A diesel	2 cu yd	4T 10½cwt	As before, but 13″, 6,000 lb. 11′ 8″.
	Model 18K3	as above	16′ 10″ L x 8′ 0″W	TD18A diesel crawler	3 cu yd	6T 14½cwt	As before, but 14″, 9,000 lb. 13′.

Drag Shovels







Above: N.C.K. 205 by Newton Chambers & Co. Ltd.

Top right: Caribou by Priestman Bros. Ltd.

Right: Dorset by John Allen & Sons (Oxford) Ltd.

Face Shovels

Below: "21" Universal Excavator by Thomas Smith & Sons (Rodley) Ltd.





Above: 10 R.B. Excavator by Ruston-Bucyrus Ltd.

Right: M 111 Marion Excavator through J. Blackwood Hodge & Co. Ltd.



Supplier	Model	Type	Overall Dimensions L x W x H	Power Unit etc.	Bucket Size	Approx-mate Weight	Remarks
FRED MYERS TRACTOR & EQUIPMENT CO. (Distributors for the Caterpillar Tractor Co., of Peoria, Illinois, U.S.A. in conjunction with Bowmaker (Plant) Ltd. of Willenhall, Caledonian Tractor & Equipment Co. Ltd. of Glasgow and H. Leverton & Co. Ltd. of Leeds and Spalding)	Caterpillar Traxcavator No. 933 Series C	Excavator and loader	13′ 10″ x 5′ 10″ x 6′ 3¼″	50 h.p. diesel engine	1 cu yd	6T 18½cwt	Max. dumping angle: 50 deg. Max. D.H. 9′ 10½″. Dig: 10⅛″ Max. forward travel speed 6.0 m.p.h.
	Caterpillar Traxcavator No. 955 Series C	as above	15′ 1½″ x 6′ 8″ x 6′ 10⅛″	70 h.p. diesel engine	1½ cu yd	9½ Tons	As before, but 10′ 8″, 12½″, 6.9 m.p.h.
	Caterpillar Traxcavator No. 977 Series D	as above	17′ 0½″ x 8′ 0″ x 7′ 3½″	100 h.p. diesel engine	2½ cu yd	14T 4cwt	As before, but 11′ 9½″, 13⅜″, 7.4 m.p.h.
NEWTON CHAMBERS & CO. LTD.	NCK 205	Shovel, skimmer, dragline or crane	13′ 5″ x 8′ 0″ x 9′ 7″	52 h.p. diesel Electric if required	Face or drag shovel: ½ cu yd. Clamshell: ⅜, ½, ⅝, cu yd	12½ Tons	Shovel: 16′ boom, D.H. Max. 18′ 8″ at 65 deg. Max. cut 6′ at 35 deg. Drag Shovel: digging depth 17′ 9″. Max. digging reach 27′
	NCK 304	Excavator	Cab details: 13′ 0″ x 8′ 9″ x 10′ 9½″	66 b.h.p. diesel Electric if required	¾ cu yd. Shovel, ½, ¾ or 1 cu yd; dragline or grab.	Shovel: 19T 15½cwt Drag shovel: 20T 6½cwt	Min. turning radius 12′. Max. travel speed 1·13 m.p.h. Shovel boom 18′ 0″ max. dig. 8′ 2″ at 35 deg. D.H. 22′ 4″ at 65 deg. Drag shovel: dig 19′ 9″. Also used as dragline, lift or grab crane and pile driver.
	NCK 605	Excavator	18′ 10½″ x 10′ 10¼″ x 12′ 9″	123 h.p. diesel Electric if required	Shovel: 1½ cu yd Grab: ½ to 2½ cu yd	Shovel: 45T Grab with 50′ boom: 40T 18cwt	Face shovel: boom 22′, D.H. max. 25′ 5″, dig 8′ 10″ at 35 deg. Drag shovel: boom 24′. max. D.H. 32′, dig. 25′ 6″. Also used as dragline, crane or grab.
R. PRATT LTD.	Sutton	Hydraulic Loader	16′0″ x 6′0″ x 6′9″	Fordson Major diesel 40 b.h.p.	½ cu yd	3T 5cwts	Max. dig. 5″. Incorporates removable cab.
PRIESTMAN BROS. LTD.	Caribou	Truck mounted excavator/crane	Chassis: 21′ 11½″ x 11′ 6″ x 11′ 5″	Carrier: Perkins 108 b.h.p. Caribou: Dorman 33 b.h.p. diesel	Drag and crowd shovels ¾ cu yd Dragline : ⅜, ½, ¾ or cu 1/5 yd	Shovels: 15T 6cwt Dragline: 15T 11½cwt	Drag shovel: Jib 15′ 3″. Max. D.H. 18′ 9″ max. dig and radius 12′ 3″ and 24′ 6″. Crowd shovel: Jib 13′. Max. D.H. 12′ 3″. Max. dig 2′. Max. C.R. 19′. Dragline: boom lengths 25′ or 35′. Dig 10′ to 16′. Also used as lifting or grab crane and hundreds of different grabs available.
	Wolf Mark IIIB	Crawler mounted excavator/crane	9′ 2″ (crawler L) with 7′ 2″ Tail radius x 7′ 10″ x 10′ 2″	Dorman 33 b.h.p. diesel	¾ cu yd	Shovel: 9T 17cwts Dragline or grab: 10T 15cwts	Crowd shovel: Jib 13′ Max. D.H. 11′ Max. dig and C.R. 3′ 3″ and 19′ luffing shovel: Jib 15′ 3″. Max. D.H. 13ft. and radius 15′ 6″ Max. C.R. 17′ 6″ Drag shovel: Jib 15′ 3″. Max. D.H. 17′ 6″. Max. dig and radius 14′ and 24′ 6″. Skimmer: Jib 15′ 3″. Width of bucket 3′ 2″. Max. D.H. 15′. Dragline (8 cu ft and 5 cu ft buckets also) Jibs 32′ or 40′. Max. D.H. for ¾ bucket—17′ and 27′ and 26′ radius. Dig 10′ to 17′.

Excavators, Shovels and Grabs (continued)

Supplier	Model	Type	Overall Dimensions L x W x H	Power Unit etc.	Bucket Size	Approximate Weight	Remarks
PRIESTMAN BROS. LTD.—continued.	Tiger V	Crawler mounted excavator/crane	10′ 6″ (crawler L) with 8′ 3″ tail radius x 8′ 5″ x 10′ 9″	Dorman 57 b.h.p. diesel	⅜ cu yd	15 Tons	Crowd shovel: Jib 16′ Max. D.H. 11′ Max. dig and radius 5′ 3″ and 23′ 6″. Drag shovel: Jib 18′ 3″ max. D.H. 21′ Max. dig and CR 17′ and 29′ 6″. Skimmer: Jib 18′ 3″, width of bucket 3′ 3″. Max. D.H. 17′ 9″. Dragline: (⅛, ¼, ½ cu yd and 8 cu ft buckets also): Jibs 35′ to 50′ with max. D.H. from 15′ to 27′ 6″. Also as trencher, crane and grab.
RANSOMES & RAPIER LTD.	410	Crawler mounted excavator/crane	9′ 3½″ (crawler L) x 7′ 11¼″ x 10′9¼″	32.5 h.p. diesel but petrol, paraffin or electric also	½ cu yd but dragline ¾ cu yd also	9T 6cwt max.	Crowd shovel: Jib 14′. Max. D.H. 11′ 6″. Max. C.H. 16′ and CR. 17′ 3″ Drag shovel: Jib 14′ max D.H. 14′ 8″. Max. dig 12′ and CR. 22′. Skimmer: Jib 14′. Max. D.H. and radius 11′ 6″ and 11′ 2″. Dragline: Jib 28′. Max. D.H. 8′ 8″ and 10′ 9″ for ½ and ¾ cu yd buckets respectively. Max. cut 16′. Also used as crane.
	462	Crawler mounted excavator/crane	13′ (crawler L) with 11′ 9″ tail radius x 12′ 8″ x 12′ 5″	121 b.h.p. diesel or electric motor	1½ cu yd	Shovel: 37T 1cwt Dragline: 35T 1¼cwt	Shovel: Boom 23′. Max. D.H. 16′. to 22′ 8″ at 40 to 60 deg. D.R. 27′ 6″ to 21′ 6″ at max height. Depth of cut max. 8′ 6″ to 6′ 3″. Dragline: Boom heights 45′ to 70′ Bucket sizes ¾, ⅞, 1 and 1¼ cu yd. Average depth of cut 23′ to 25′. D.H. 10′ to 41′ 3″. Also used as lifting or grab crane.
	W90	Walking Dragline	26′ 6″ W. overall x 19′ 6″ TR	Electric or diesel	1½, 2, 2½ cu yd	108 Tons	Boom 127′ to 102′ at 30 deg. D.R. 120′ to 98′. D.H. 52′ to 35′. Dig. 45′ to 55′.
	W150	As above	34′ 3″ W overall x 31′ 6″ TR	Electric or diesel-electric	3, 4, 5, 6 cu yd	188 Tons average	Boom: 149 to 121′ at 25 to 40 deg. D.R. 148 to 105′. D.H. 35 to 57′ 6″ Max. dig 52′ 8″ to 95′.
	W600	As above	53′ 0″ W overall x 50′ 0″ TR	Electric	8, 10, 12 cu yd	782 Tons average	Boom: 204′ 9″ to 185′ at 25 deg. D.R. 201 to 165′. D.H. 72 to 55′. Max. dig 100′.
	W1400	As above	72′ 8″ W overall x 63′ 6″ TR	As above	20 cu yd	1650 Tons	Boom: 282′ at 30 deg. D.R. 260′. D.H. 140′. Dig Max. 100′.
ROTARY HOES LTD.	Howard	Hydraulic Bull Loader	—	Platypus crawler	1 cu yd	—	D.H. 7′ 6″. Max. dig. 9″. Cutting edge reversible.
RUSTON-BUCYRUS LTD.	10 RB	Crawler mounted Excavator/crane/ pile driver	9′ 1″ (crawler) L with 6′ 0″ TR 7′ 4″ to 9′ 4″ x 9′ 9½″	Ruston 34 h.p. diesel also electric	¾ cu yd but dragline 5 cu ft also	9¼-9½ Tons	Shovel: Boom 13′ 6″. Max. D.H. (at 45 and 60 deg.(11′ and 13′ 9″. Max. D.R. 17′ and 15′ 6″. Max. dig: 3′ 6″ and 2′. Dragline: Boom 30 & 35′. Max. D.R. 27′ 6″ and 34′. Average depth of cut 13′ 9″ to 17′ Max. D.H. 14′ and 21′. Heavy duty buckets available. Drag shovel: Boom 14′ 6″. Max. D.H. 7′ Max. dig and D.R. with front opening dipper 12 and 23′. Hoe type dippers also. Skimmer: Jib 14′ 6″. Max. D.H. 12′ 8″. Max. C.R. 20′. Also used as grab or lift crane or pile driver.
	19RB	As above	11′ 0″ (crawler L) with 9′ TR x 11′ 4″ x 10″ 3¼″	Ruston 55 h.p. diesel or 35 h.p. electric	⅝ cu yd but dragline ½ & ¾ cu yd also	Shovel: 17½ Tons Dragline: 18 Tons	Shovel: Boom 18′. Max. D.H. (at 40, to 60 deg.) 14′ 6″ to 19′ 6″. Max. D.R. at max. height, 22′3″ to 16′ 9″. Max dig. 7′ 6″ to 5′ 6″. Dragline: Boom 40′ to 50′. Max. D.H. 18′ 3″ to 24′ 6″. Max. D.R. 34′ to 43′ 6″. Average dig. 17′ to 21′ 9″. Ultra light bucket also. Drag shovel: Boom 18′ 9½″ with front type dipper Max. D.H. 9′. Max. dig. 18′ 6″. Hoe type dippers available. Skimmer: Jib 18′ 9½″, clear D.H. (boom at 60 deg.) 17′ 3″. Max. C.R. 25′. Also used as grab and lift crane or pile driver.
	22RB	As above	12′ 0″ (crawler L) with 9′ 0″ TR x 11′ 4″ x 10′ 6″	Ruston 66 h.p. diesel or 40 h.p. electric	¾ cu yd but dragline ⅞, 1, and 1¼ cu yd also	Shovel: 20 Tons Dragline: 20¼ Tons	Shovel: Boom 18′. Max. D.H. (at 40 to 60 deg.) 14′ 9″ to 19′ 3″. D.R. at max. heights 22′ 9″ to 17′ 8″ Max. dig. 7′ 6″ to 5′ 6″. Dragline: Boom 40 to 50′ at 39 deg. boom angle. D.H. 17′. Operating radius 35′, dig. 17′ 8″ average. Drag shovel: Boom 18′9½″ with front opening dipper: max. D.H. 8′9″, radius 13′9″ depth 18′ 6″. C.R. 29′. Hoe type dippers available. Skimmer: Boom 18′ 9½″, max. D.H. 17′ 3″ max. CR. 25ft. Also used as grab or lifting crane or pile driver.
SKYHI HEAVY DUTY LOADERS LTD.	Ardua	Heavy duty Loader	17′ 2″ x 6′ 8″ x 7′ 3″	Fordson Major diesel 44 b.h.p.	1 cu yd struck, 1¼ cu yd heaped. 4′ 0″ wide x 2′ 10″	5¾ Tons	Twin balanced rams on main lifting arms and double acting rams on shovel for controlling tip and crowd action. Max. D.H. 12′ 2″. Also used as bulldozer or light crane.

Supplier	Model	Type	Overall Dimensions L x W x H	Power Unit etc.	Bucket Size	Approximate Weight	Remarks
THOMAS SMITH & SONS (RODLEY) LTD.	21	Universal Excavator	12′ 0″ (crawler L) with 9′ 3″ TR x 10′ 3″ x 11′ 2″	72 b.h.p. diesel or 40 h.p. electric	¾ cu yd standard 1 cu yd grab	21½ Tons for face shovel	Shovel is fitted with positive chain crowd. Also used as drag shovel, gooseneck drag shovel, dragline, skimmer, crane, grab or pile driver. Various boom lengths available.
	8	Universal Excavator	7′ 4″ (crawler L) with 5′ 9″ TR x 6′ 8″ x 9′ 6″	24 b.h.p. diesel or 20 h.p. electric	8 cu ft but 5 and 10 cu ft also for dragline	7.4 Tons shovel 6.95 Tons grab	Boom 14′ 3″ but 25 and 30′ for dragline. Shovel: D.H. 10′ 9″, with radius of 10′ 3″, Max. dig 2′, CR. 16′. Drag shovel: Max cutting width 2′ 6″, depth 12′ 3″. Max. D.H. 8′ max. CR. 21′ 9″. Skimmer: Max. D.H. 11′ 3″, CR. 16′ 6″, D.R. 11′ 3″. Dragline: Operating radius of 8 cu ft. bucket at 36 deg. on 25′ boom. D.H. 9′, dig. depth 11′ 6″. Also used as lift or grab crane.
	Super Ten	Universal Excavator	8′ 9″ (crawler L) with 7′ 0″ TR x 7′ 9″ x 10′ 9″	Gardner diesel 33 h.p. or 25 h.p. electric	10 cu ft standard	9½ Tons	Jib 14′ 6″ but 30′ for dragline. Max. depths of cut: Shovel 4′, drag: 14′. Dragline 16′. Also used as lift or grab crane and skimmer.
TRACTORS (LONDON) LTD.	Trusty	Hydraulic High lift shovel	13′ 0″ x 4′ 3½″ x 5′ 0″	6-14 h.p. petrol	7½ cu ft	—	Drive throughout by chain. Height of lift 7′ 6″ max travelling speed 8 m.p.h. Lifting capacity 5 cwt
F. E. WEATHERILL LTD.	2H	Hydraulic loading shovel	15′ 7″ to 16′ 4″ (scoop lowered) x 6′ 8″ x 7′ 0″	Fordson Major diesel 44 b.h.p.	¾, 1, 1¼ cu yd	5¼ Tons	Max. operating height 13′ 10″ to 14′ 6″. Max. D.H. 12′ Max. lift capacity 25 cwt.
	2HH Hi-tip	As above	15′ 6″ (scoop lowered) x 6′ 6″ x 8′ 0″	As above	½ or ¾ cu yd	4 T 18 cwt	Max. D.H. 12′ 6″. Max. lift capacity 15 cwt. Scoop 4′ wide.
	2HCR	As above	16′ 2″ x 6′ 6″ x 7′ 0″ (scoop lowered)	As above	¾, 1, 1¼ cu yd	5 T 14½ cwt	Automatic or controlled scoop crowd. Max. operating height 15′ 10″. Max. D.H. to ground and receptacles: 10′ 3″ and 12′
	2-way overloader	As above	16′ 1″ to 16′ 5″ x 6′ 9″ x 7′ 0″ (scoop lowered)	As above	¾, 1, 1¼ cu yd	6 T 1 cwt	Max. operating height 17′ 9″. Max. D.H. forward and rear, 8′ 7″, 9′ 2″. Hydraulic crowd.



Tiger V. by Priestman Bros. Ltd.

Draglines



W.1400 Walking Dragline by Ransomes & Rapier Ltd.

Dozers

Supplier	Model	Tractor	Maximum Blade L x H	Maximum Dig	Overall L x W x H	Approximate Weight	Remarks
AVELING-BARFORD LTD.	Calfdozer	9 b.h.p. Petrol	4′ 6″ wide	—	7′ 1½″ x 3′ 9″ x 4′ 7″	1T 13cwt	Left or right angle dozing, interchangeable with two-tine ripper.
THE BIRTLEY CO. LTD. (made under licence to and from the designs and specifications of Caterpillar Tractor Co., Peoria, Illinois, U.S.A.)	2A hydraulic bulldozer	"Caterpillar" D2	8′ 1½″ x 1′ 11⅜″	11″	11′ 1⅜″ x 8′ 1½″ x 5′ 2½″	18cwt	Angling to 25 deg. Max. lift 28″ Max. tilting 9″.
	4A ditto	"Caterpillar" D4	9′ 5″ x 2′ 3½″	13½″	12′ 7″ x 9′ 5″ x 5′ 9½″	1T 9cwt	Angling to 25 deg. Max. lift blade straight: 31″ Max. tilting: 11″.
	6A ditto	"Caterpillar" D6	11′ 10″ x 2′ 9½″	10″	15′ 9½″ x 11′ 10″ x 6′ 3½″	2T 5cwt	Angling to 25 deg. Max. lift blade straight: 36″ Max. tilting: 10″.
	6A Cable bulldozer	"Caterpillar" D6	as above	not limited	as above	1T 17cwt max.	Front or rear cable control. Other remarks as for 6A hydraulic.
	6S hydraulic bulldozer	"Caterpillar" D6	9′ 6½″ x 3′ 2″	11″	15′ 7″ x 9′ 6½″ x 6′ 3½″	2 Tons	Straight blade pitch adjustment 10 deg. Max. lift 36″ Max. tilting 10″.
	6S cable bulldozer	as above	as above	not limited	as above	1T 13cwt max.	Front or rear cable control. Other remarks as for 6S hydraulic.

Blaw-Knox Angledozer with David Brown 50 ITD

Bristol "25" by H. A. Saunders Ltd.









Bray Bulldozer with Fowler Challenger III Crawler

Howard Bullloader by Rotary Hoes Ltd. with Platypus Crawler

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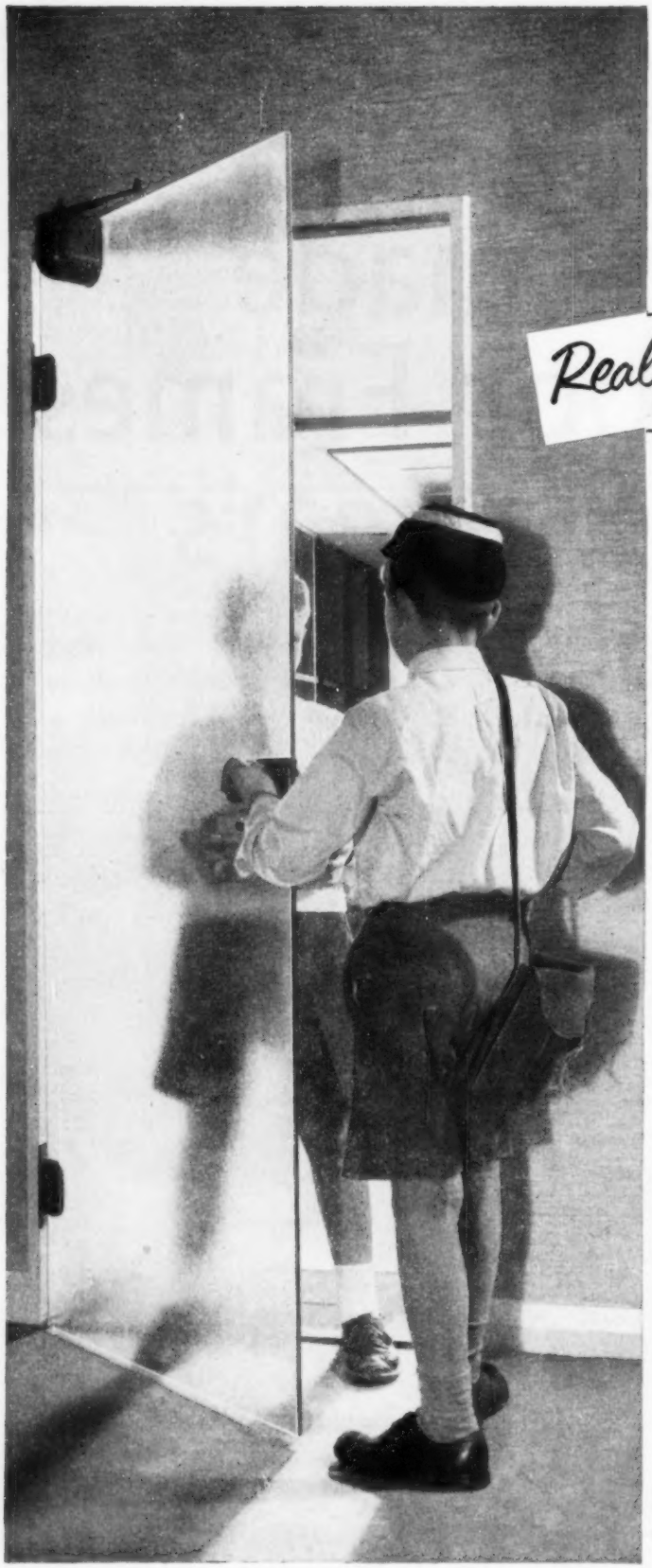
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ACDS2

Dozers (continued)

Supplier	Model	Tractor	Maximum Blade L x H	Maximum Dig	Overall L x W x H	Approximate Weight	Remarks
THE BIRTLEY CO. LTD. (Continued)	7A hydraulic bulldozer	"Caterpillar" D7	12′ 8″ x 3′ 2½″	14½″	17′ 6½″ x 12′ 8″ x 6′ 9½″	2T 18cwt	Angling to 25 deg. Max. lift: 40½″. Max. tilting: 12″.
	7A cable bulldozer	"Caterpillar" D7	as above	not limited	17′ 6½″ x 12′ 8″ x 6′ 8″	2T 10½cwt max.	Front or rear cable control. Other remarks as for 7A hydraulic
	7S hydraulic bulldozer	"Caterpillar" D7	10′ 3½″ x 3′ 9½″	13″	17′ 1½″ x 10′ 3½″ x 6′ 8″	2T 9cwt	Max. pitch of 10 deg. Max. lift: 42″. Max. tilting: 12″.
	7S cable bulldozer	"Caterpillar" D7	as above	not limited	as above	1T 19cwt max.	Front or rear cable control. Other remarks as for 7S hydraulic.
	8A hydraulic bulldozer	"Caterpillar" D8	13′ 4″ x 3′ 2½″	16½″	19′ 7½″ x 13′ 4″ x 7′ 6″	3T 4cwt	Angling to 25 deg. Max. lift: 48½″. max. tilting: 12″.
	8A cable bulldozer	"Caterpillar" D8	as above	not limited	as above	2T 16cwt max.	Front or rear cable control. Other remarks as for 8A hydraulic.
	8S hydraulic bulldozer	"Caterpillar" D8	11′ 3½″ x 3′ 9½″	14″	19′ 2″ x 11′ 3½″ x 7′ 6″	2T 18½cwt	Max. pitch 10 deg. Max. lift 52½″. Max. tilting 12″.
	8S cable bulldozer	"Caterpillar" D8	as above	not limited	as above	2T 10cwt max.	Front or rear cable control. Other remarks as for 8S hydraulic
	"U" hydraulic bulldozer	"Caterpillar" D8	11′ 11″ x 3′ 9½″	not limited	21′ 2″ x 11′ 11″ x 7′ 6″	3 Tons	Max. pitch 10 deg. Max. tilting 16″. Max. lift 50″.
	"U" cable bulldozer	as above	as above	as above	as above	2T 14cwt max.	Front or rear cable control. Other remarks as for "U" hydraulic.
BLAW KNOX LTD.	Hydraulic Bulldozer	David Brown 30ITD Crawler	6′ 7½″ x 2′ 6½″	10½″	11′ 7½″ L x 6′ 8½″ W	16½cwt E	Lift 3′ 0″, tilt 5½″
	Hydraulic Angledozer	David Brown 50 ITD Crawler	8′ 9″ x 2′ 4½″	7½″	11′ 11½″ L x 8′ 9″ W	1T 2½cwt E	Lift 3′ 4″, tilt 7″, angling 25 deg.
	As above	Fowler Challenger III Crawler	12′ 1½″ x 3′ 0″	12″	16′ 11″ L x 12′ 1½″ W	2T 5½cwt E	Lift 3′ 0″ and tilts 7″, angling 25 deg.
	Cable Angledozer	As above	As above	12½″	17′ 3″ L x 12′ 1½″ x 9′ 1½″	13T 5½cwt	Lift 3′ 7″ and tilt 7″, angling 25 deg.
	Hydraulic Angledozer	Fowler VF Crawler	9′ 0″ x 2′ 3″	9½″	11′ 5″ L x 9′ 0″ W	1T 8½cwt E	Lift 3′ 10½″ and tilt 6½″, angling 25 deg.
W. E. BRAY & CO. LTD.	Hydraulic Angledozer	Fowler Challenger IV Crawler	13′ 1½″ x 3′ 5½″	17″	19′ 0½″ L x 13′ 1½″ W	3T 10½cwt E	Lift 3′ 6½″, camber 1′ 4½″, angling 26 deg.
	Hydraulic Bulldozer	As above	13′ 6″ x 3′ 7″	20″	19′ 7½″ L x 13′ 6″ W	3T 11½cwt E	"U" type blade Centre Section 7′ 11½″, lifts 3′ 3″. Angle of swept sections from centre: 26 deg.
	Hydraulic Angledozer	Fowler Challenger III diesel Crawler	11′ 10″ x 3′ 5″	13″	18′ 2″ L x 11′ 10″ W	2T 16½cwt E	Lift 3′ 6″, camber 1′ 4″, angling 26 deg.
	Hydraulic Bulldozer	As above	11′ 6″ x 3′ 6″	13″	18′ 5″ L x 11′ 6″ W	2T 7½cwt E	"U" type blade centre section 6′ 0″ lift 3′ 5″. Angle of swept sections from centre : 26 deg.
	Hydraulic Angledozer	Fowler VFA diesel Crawler	10′ 2½″ x 2′ 7½″	7″	12′ 8″ L x 10′ 2½″ W	1T 7cwt E	Lift 2′ 10½″, camber 8″ either way and angles 26 deg. either way
HANOMAG (CRAWLER TRACTORS LTD.)	K90E Freisch Bulldozer	Hanomag K90 diesel Crawler	8′8¾″x3′5 11/32″	12 11/32″	16′ 4½″ x 8′ 8½″ x 5′ 10″	2T 7½cwt E	Max. lift 3′ 8½″, tilt 11″
	K90E Frisch Angledozer	As above	11′ 1⅛″ x 2′ 11 7/16″	12 7/16″	16′ 8½″ x 11′ 1½″ x 5′ 10″	2T 13cwt E	Max. lift 3′ 9½″, tilt 12½″, angling 26 deg.
	K90E Menck Angledozer	As above	12′ 0⅛″ x 2′ 10″	23⅛″	16′6 7/32″ x 12′3 1/4″ x 5′10″	2T 9cwt E	Max. lift 4′ 7½″, tilt 15″, angling 30 deg.
	K90E Menck Bulldozer	As above	8′9 29/32″x3′4 5/32″	21 1/16″	15′11 11/32″x9′6 1/8″x5′10″	2T 0⅛cwt E	Max. lift 3′ 9 9/32″
INTERNATIONAL HARVESTER CO. OF GREAT BRITAIN LTD.	International Bullgrader	International BTD-6 diesel or BT6 distillate Crawler	8′ 6″ x 1′ 9″	13″	11′ 4½″ x 8′ 6″ x 4′ 11½″	1T 4½cwt E	Hydraulic control. Bulldozes or angles to 25 deg. Tilt 8½″
MARSHALL SONS & CO. LTD.	Marshall-Moore BCD3 Cable Angledozer	Fowler Challenger III diesel Crawler	11′ 9″ x 3′ 5″	Not limited	18′ 6″ L x 11′ 9″ W	3T 7cwt	Lifts 3′ 6″, camber 12″ each way and angles 25 deg.
H. A. SAUNDERS LTD.	Bristol 25 Hydraulic Angledozer	Perkins P3 (TA) diesel 25 b.h.p.	5′ 3″ x 1′ 11″	6″	10′ 2″ x 5′ 6″ x 4′ 2″	2T 7cwt	Lifts 19½″, angling 30 deg. Top speed 5.2 m.p.h. Ripper available

Scrapers

Supplier	Model	Cu Capacity in yds.	Depth of Cut	Method of Operation	Overall Dimensions L x W x H	Approx. Weight	Remarks
THE BIRTLEY CO. LTD. (made under licence to and from the designs and specifications of Caterpillar Tractor Co. Peoria, Illinois, U.S.A.)	15	(a) Struck: 10 heaped: 12 (b) With 10" top extension Struck: 12½ heaped :15	12"	Cable operated for use with DW15 Tractor.	25'4" x 10'5" x 8'10"	6T 7 cwt. approx.	The flat bottom bowl has sides 4' 7" high and bottom dimensions of 8' 6" x 3'9". Ejection forward and positive. Max. depth of spread 1' 1¾". Brakes are air actuated and synchronised with tractor brakes. Cut width 8' 6".
	70	(a) struck: 10 heaped: 13 (b) With 10" top extension struck: 12 heaped: 15	12"	Cable operated for use with D7 Tractor	31' 4" x 10' 5" x 8' 7"	9T approx.	Bowl dimensions as for model 15 above. Ejection is forward and positive. Maximum depth of spread is 1'2½". Width of cut: 8' 6".
	463	struck: 18 heaped: 25	Any practical depth	Cable operated for use with D8 Tractor.	38' 0" x 11' 9" x 11' 1½"	13T 14½cwts. approx.	Flat bottom low bowl has sides 4' 10" and dimensions of 10' 0" x 5' 9" Ejection dozer type positive. Max. depth of spread 1' 8". Width of cut: 10' 4".
	470	struck: 18 heaped: 25	Any practical depth	Cable operated for use with DW21 Tractor.	25' 11" x 11' 9" x 11' 0"	8T 15cwts approx.	Low bowl of exclusive design, as for No. 463. Brakes are air actuated.
J. BLACKWOOD HODGE & CO. LTD. (Distributors for Euclid Division, General Motors Corporation, Cleveland 17, Ohio, U.S.A.)	Twin-Power Euclid	struck: 18 heaped (3 to 1): 21 heaped (1 to 1): 24	18"	Hydraulic, General Motors, diesel, 190 b.h.p. or Cummins 200 b.h.p. diesel.	Scraper : 32' 7" x 11' 6" x 10' 3½" Tractor: 19' 11½" x 8' 11½" Overall: 47' 4¾" x 11' 6" x 10' 3½"	Scraper: 19T 1cwt Tractor: 10½ Tons	Scraper and tractor have identical engines total b.h.p. of 380 or 400. Average depth of bowl 5' 4", length 9' 9", width 9' 11½". Max. depth of spread 2' 4". Width of cut 10' 0".
BLAW KNOX LTD.	BK-90	struck: 8 heaped: 11	13"	Double drum cable control unit	27' 0" x 10' 5" x 8' 1"	6T 9½cwts	For operation with Class II, Group 2 (76-100 drawbar h.p.) tractors. Bowl 8' 6" x 2' 2" with 4' 3" sides. Depth of spread 1' 10".
	BK-120 Mk. II	struck: 11 heaped: 15	13"	As above	31' 8" x 10' 9¼" x 9' 10½"	8T 18½cwts	For operation with class II group 3 and Class III (101-175 drawbar h.p.) tractors. Bowl 8' 9" x 3' 2½" with 5' 1" sides. Depth of spread 1' 10".
EUCLID (GREAT BRITAIN) LTD.	BISH	struck: 12 heaped: 14	15"	Hydraulic control: Tractors B5 and B6 FDT with Rolls Royce 180 h.p. diesel or Tractors B7 and B8 FDT with Leyland 154 h.p. diesel	Scraper: 25' 10¾" x 9' 6½" x 4' 4" with Tractor: 40' 8½" x 9' 6½" x 9' 9"	Scraper: 10T 18cwt Tractor: 8T 14cwt	Bowl 8' 6" x 9' 6½" x 4' 4". Max. depth of spread 2' 3½". Width of cut 9' 7". Bowl lift by two hydraulic hoists. Bottom dump semi-trailer No. BIW 13 cu yd capacity is interchangeable with the scraper.
INTERNATIONAL HARVESTER CO. of GREAT BRITAIN LTD.	Paramount-	ninety (made by	Blaw Knox)	—See BK—90 above	—for use with International	TD18 Diesel	Crawler Tractors
	Sterling B-695	struck: 3.5 heaped: 5.0	9"	Hydraulic for use with BTD-6 diesel crawler	Scraper: 18' 3" x 7' 8½" x 6' 4"	2T 13½ cwt	Bowl: 6' 0" x 1' 10" with 3' sides. Ejection forward positive. Depth spread 1' 3". Width cut: 6'.
FRED MYERS TRACTOR & EQUIPMENT CO. (Distributors for the Caterpillar Tractor Co. of Peoria, Illinois, U.S.A. in conjunction with maker (Plant) Ltd. of Willenhall, Caledonian Tractor & Equipment Co. Ltd. of Glasgow and H. Leverton & Co. Ltd. of Leeds and Spalding). Can also supply the Birtley Scrapers.	Caterpillar 40	struck: 3.6 heaped: 4.5	6½"	Hydraulic control for use with D4 Tractor.	21' 4½" x 7' 5½" x 5' 6½"	3T 13cwts	Bowl dimensions 6' 0" x 2' 0" x 9½" sides, 3'. Ejection forward and positive. Maximum depth of spread 11". Width of cut 6'.
	Caterpillar 60	(a struck: 7 heaped: 9 (b) with 10" top extension struck: 8.3 heaped:10.5	11"	Cable operated for use with D6 Tractor.	28' 2" x 9' 4" x 7' 9"	6T 0½cwt	Bowl 7' 8" x 3' 4" with 3' 11" sides. Ejection forward and positive. Max. depth of spread is 13½". Width of cut 7' 8". Also supply angle and bulldozers for D6 Tractor.
	Caterpillar 90	(a) struck: 21.2 heaped: 27 (b) with 15" top extension struck: 25.5 heaped: 31.0	not limited	Cable operated for use with D9 Tractor.	39' 9½" x 12' 0" x 10' 6"	16T 18¾cwt	Flat bottom bowl has dimensions of 10' 0" x 5' 5" with 5' 11" sides. Load capacity: 70,000 lbs. Ejection is forward. positive Max. depth of spread 16", width of cut 10' 0".



Euclid BISH Scraper with FDT Tractor by Euclid (Great Britain) Ltd.

CRITTALL UNIVERSAL CASEMENTS

This illustration shows the new offices of John Laing & Son Ltd. (*Architects: Adams, Holden & Pearson* F/F.R.I.B.A.) which are fitted with CRITTALL PURPOSE-MADE UNIVERSAL CASEMENTS POSITIVELY RUSTPROOFED by the hot dip galvanizing process.



In all of Crittalls' long experience in the making of windows no year has passed without some substantial advance in design or manufacturing technique. It is because Crittalls are never content to rest merely on past achievements; because tomorrow's methods, designs and conceptions of service must be anticipated today, that Crittalls' reputation has reached its high level.

CRITTALL

THE CRITTALL MANUFACTURING CO LTD · BRAINTREE · ESSEX

Branches and Depots throughout the country

TRW/71



Modern paints containing Titanium Oxide are renowned for outstanding durability. **In all weathers** they can be relied on not to flake or crack and they are not discoloured by the atmospheric pollution of industrial areas. Titanium Oxide gives paints of greater hiding power with fewer coats and, when eventually repainting is required, no burning off is necessary. It pays to remember that paints based on Titanium Oxide stay brighter longer.

B T P TITANIUM PIGMENTS

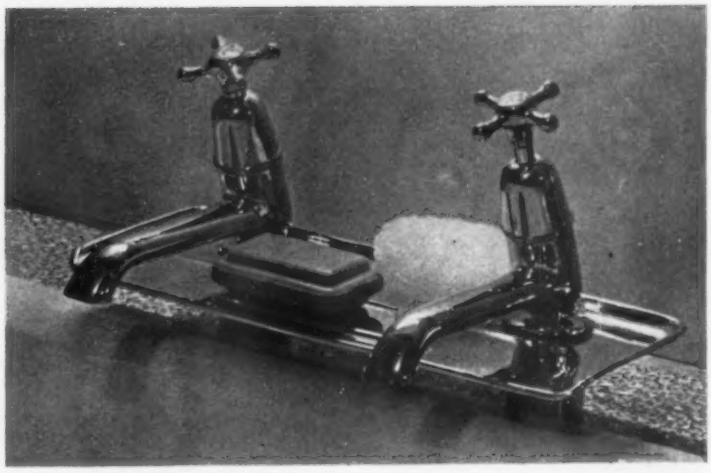
Issued in the interest of better paintwork by

BRITISH TITAN PRODUCTS COMPANY LIMITED
COPPERGATE
YORK

Factories at Grimsby and Billingham and at Burnie, Tasmania. Agents in most principal countries.

Industrial Products

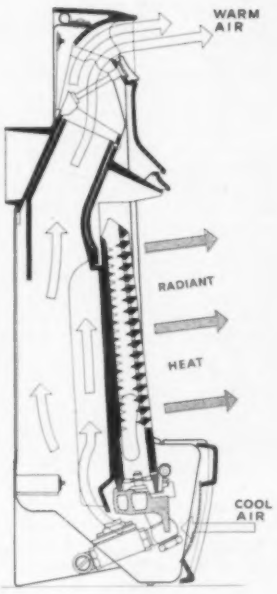
This week all the new items have been selected from those on show at the Ideal Home Exhibition.



1

AMONG the many new products being shown for the first time in the Daily Mail Ideal Home Exhibition, heating appliances seem to predominate. After heating, the kitchen seems to be the best catered for department in the modern home. Apart from the "House of the Future", the houses of today, if somewhat less exciting in their design, contain many facets of interest. Fig. 1 shows an extremely neat soap tray which can be seen in the kitchen of the Unity House. It was made by Allied Ironfounders Ltd. to the design of Kendrick Findlay & Partners, Consultant Architects to Unity Structures Ltd.

Amalgamated Paints (London) Ltd. are showing Luminart colours which they claim are up to six times more brilliant than the brightest ordinary paint; it is made in six colours. Also being shown by this firm is Staddosheen, a new plastic emulsion distemper. The sectional view shown in Fig 2 is of the Gasmiser room heater by Cannon (G.A.) Ltd., which incorporates the latest developments in hot air convection allied to radiant heating by gas.

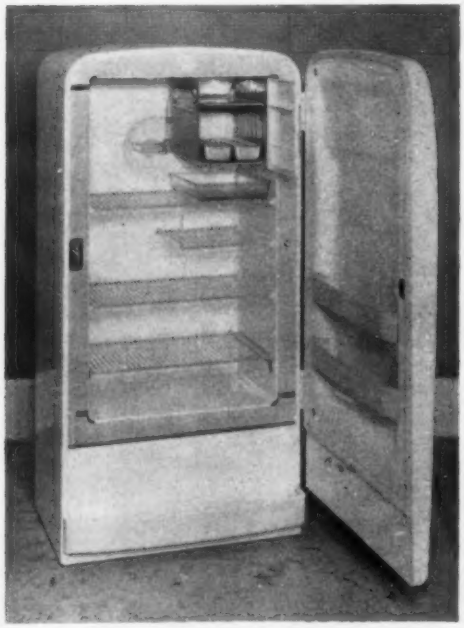


2

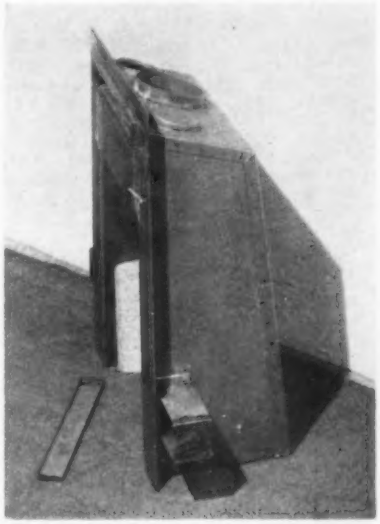
The new English Electric Model 7501 Refrigerator (Fig. 3) has a capacity of 8.3 cu ft and a shelf area of 12.2 sq ft. It is available in cream or white enamel finish and costs under £130. Another new piece of equipment on this stand is a washing machine.

The New World 71 table-top cooker by Radiation Group Sales Ltd. has the gas oven beside, and at the same height as the hotplate. The hotplate, which contains four boiling burners and a high-speed grill is mounted on a cantilever which allows easy access to the crownplate below. The oven may be mounted on either side of the hotplate in the vitrious enamelled stand which includes a rack for pots and pans. An illustration of this new gas cooker is on page 298.

Maubard Industries Ltd. are showing for the first time an all steel convector fire (Fig. 4). It comprises a steel convection chamber with damper and flow deflector plate, and inlet and outlet points on the sides, front and top. Designed to be built in behind a fire surround, it is claimed to heat 2,500 cu ft ; with a very slight adaptation convected air can be transferred to heat two adjoining rooms very simply. In the *A.&B.N.*, 8th March, we illustrated the Redfyre open convector fire by Newton Chambers & Co. Ltd. which is also being shown for the first time at this exhibition. Since that time new performance figures have been supplied and the latest independent tests have given an efficiency of over 56 per cent when burning little more than 1½lbs. of fuel an hour.



3



4

Industrial Notes

● A new company called the Modular Concrete Co. Ltd., of Bedfont, near Staines, Middlesex, has been formed by Wates Limited, the London firm of building and civil engineering contractors. Mr. Charles David Mitchell has been appointed a director of the new company which will take over the work formerly carried out by Wates' Bedfont Concrete Works.

● The Directors of The Rugby Portland Cement Co. Ltd. announce with pride the results of the year ended 31st December, 1955, as follows. Trading surplus of the Group, including investment income, after deducting the proportion attributable to outside interests in subsidiaries. Net amount available after tax, etc., £562,203. Ordinary Share Capital ranking for dividend £1,500,000. "A" Share Capital ranking for dividend, £50,000

● The successful candidates in the Royal Society of Arts Industrial Art Bursaries Competition for 1955 includes: Paul Joseph Collins, William David Harbour, Kenneth George Sadler, Robert John Lane, David John Keepax, Peter Loftus Maddock, James Hunter, Audrey Elizabeth Eite, James Alfred Morgan, George Brown Ritchie.

● At the Annual General Meeting of the Prestressed Concrete Development Group held at the Grosvenor Hotel, London, S.W.1, on Thursday, 12th January, 1956, the following committee was appointed to serve for 1956: Chairman, J. Singleton-Green, M.Sc., M.I.C.E., M.I.Struct.E., A.M.I.Mech.E., M.Soc.C.E. (France), F.Inst.H.E.; Vice-Chairman, G. W. Kirkland, M.B.E., M.I.Struct.E., M.Inst.H.E., M.Cons.E., G. M. Adie, F.R.I.B.A., D. A. Andrews, A.M.I.C.E., J. Beattie, B.Sc., A.M.I.C.E., A.Inst.H.E., R. T. Betts, M.B.E., B.Sc., A.C.G.I., A.M.I.C.E., C. F. Brereton, D. M. Chaston, F.P.W.I., H. G. Cousins, B.Sc., M.I.C.E., M.I.Struct.E., J. Cuerel, B.Sc., M.I.C.E., M.Cons.E., R. F. Galbraith, M.C., R.E., B.Sc., A.M.I.C.E., M.I.Instruct.E., M.Cons.E., J. W. Gibson, Gontran Goulden T.D., A.R.I.B.A., C. W. Hamilton, A. J. Harris, B.Sc.(Eng.), M.I.C.E., E. M. Hayward, B.Sc., A.M.I.C.E., R. B. Hill, B.Sc., A.M.I.C.E., W. M. Johns, M.C., B.Sc.(Eng), A.M.I.C.E., A. Kirkwood Dodds, M.C., F.R.I.B.A., F.S.E., M.I.Struct.E., M.Soc.C.E. (France), A. Moller, B.Sc., M.I.C.E., M.I.Struct.E., Colonel W. Burrans Sykes, T.D., M.I.Struct.E., M.Soc., C.E. (France) M.S.E. Chief Technical Officer: A. W. Hill, B.Sc. (Eng), A.C.G.I., M.I.C.E., D.I.C., M.I.Mun.E. Secretary: P. H. T. Gooding, A.M.I.Struct.E. Assistant Secretary: G. E. Young.

● Sidney Flavel and Co. Ltd. have pleasure in announcing the appointment of Mr. Alexander Peet as Assistant Chief Designer. Mr. Peet is well known in the gas industry for his contribution towards the development of instantaneous gas water heating.

● At the Extraordinary General Meeting of Hills (West Bromwich) Limited, held on 5th March, 1956, the resolution increasing the authorised share capital from £475,000 to £750,000 by the creation of an additional 1,100,000 Ordinary Shares of 5s. each was duly passed, and at a meeting of the Unsecured Noteholders the issue of the new Ordinary Shares so created was sanctioned.

● A further Welding Design Course to assist draughtsmen and designers of welded structures and fabrications, will commence on Monday, May 14, at the head office of Quasi-Arc Limited, in Bilston, Staffordshire. The course, which will deal with all aspects of arc welding, consists of lectures, demonstrations, films and visits to works, and lasts for one week. It provides concentrated training for students who are not able to attend evening sessions. Further details, together with the enrolment form, can be obtained from the Constructional Design Department at Bilston.

● Mr. Cedric Mell, Chief Technical Manager of the laboratories of Blundell, Spence and Co. Ltd., has completed an exhaustive two-year investigation into the effects of air pollution upon paint.

● The Mayfair Colour Centre inaugurated on 1st March at Berger House, Berkeley Square, W.1, for the benefit of decorators and the public, a free advisory service on the use of colour in home decoration. The new project is housed and sponsored by Lewis Berger Limited, makers of Bergermaster range of paints, and it is an advisory service on colour. Its consultants are concerned with wallpapers, carpets and fabrics as well as with paint.

● Since 1st March, 1956, the address of the Glasgow Branch Office and Stores of British Insulated Callender's Cables Ltd. has been 109, Douglas Street, Glasgow, C.2. Telephone number — CENtral 2151-4. This change of address does not involve any change of location, is the result of an extension of premises.

● The Head Office of Keir and Cawder Ltd. is being moved from the central area of Glasgow to a new site near Bishopbriggs. A modern office block is at present under construction on the Kirkintilloch road, and will be ready for occupation by early summer.

● The Mersey Docks and Harbour Board has adopted timber trusses, 88 ft. in length and designed by the Timber Development Association, for the roof of a five hundred yards long dock shed now being built in Liverpool.

● The Fire Offices' Committee of the Fire Protection Association have revised their recommendations for installations burning liquid fuel with a flash point not below 150°F. The recommendations are entitled "Recommendations in Connection with Liquid Fuel (including coal tar fuels) having a flash point not below 150°F. (closed test)"; and copies will be supplied free on application to the Fire Protection Association, 15, Queen Street, London, E.C.4.

● Mr. Thomas Thornton Chapman, of 51, Gargrave Road, Skipton, founder of T. T. Chapman and Co., builders and contractors, Skipton, left £10,636 (net £10,264).



The New World 71, a new horizontal-type gas cooker described on the previous page.



Q What type of floor is this?

see below



You don't need to be told that the setting is a classroom. It is, in fact, Prenton Primary School, Birkenhead; designed by T. A. Brittain, Esq., F.R.I.B.A., Dip.Arch., Borough Architect, and J. Curtis, Esq., A.R.I.B.A., Chief Assistant Architect. But the flooring ? Obviously a colourful floor, planned for the purpose with alphabet cutouts appropriately worked into its design. A hardworking floor this, tough and long-lasting, to cope with the constant traffic of many feet—easy to clean and maintain.

THE ANSWER

It is, of course, ACCOTILE, the well-known, versatile, low-cost flooring with the luxury look, the modern thermoplastic flooring laid tile by tile to any design or colour scheme. Made in 26 Plain, Monochrome or Marbled effects, size 12" x 12" or 9" x 9" with die-cut insets of letters, numerals, animals or special motifs and feature strip. The perfect material for Schools, as well as Public, Commercial or Domestic buildings of every type.

A Armstrong ACCOTILE flooring

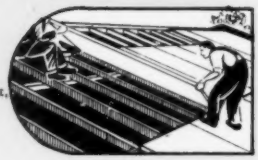
ARMSTRONG CORK COMPANY LTD., Flooring Department, BUSH HOUSE, ALDWYCH, LONDON, W.C.2. COVent Garden 1101.

G

CEILINGS

ROOF-DECKING

Under Sheet-metal (Traditional or Patent). Asbestos. Bituminous Felt, etc.

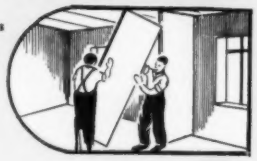


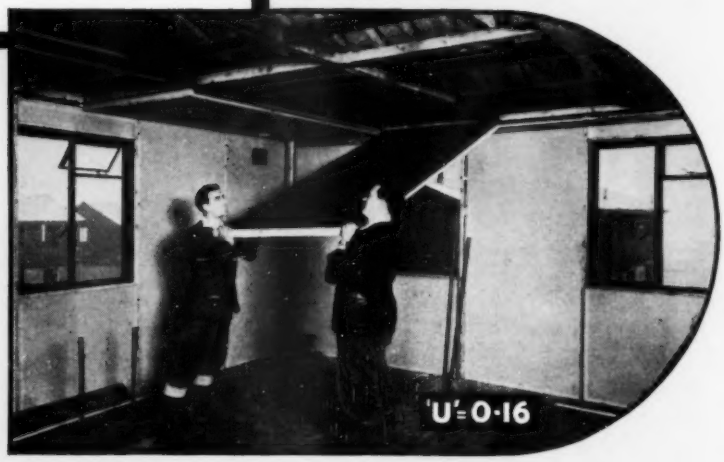
WALL-LININGS



PARTITIONING

- ★ Factory Screens
- ★ Divisions, etc.
- ★ Permanent or temporary
- ★ Glazed or unglazed





STRAMIT

—THE TWO-INCH THICK

BUILDING SLABS

—the low-cost dry-construction material, which combines great strength and rigidity with exceptionally good values of thermal insulation, sound absorption and fire resistance

*

THOUSANDS OF TONS ARE USED ANNUALLY IN THE CONSTRUCTION OF FACTORIES, HOSPITALS, SCHOOLS, OFFICES, FLATS AND HOUSES, THROUGHOUT THE COUNTRY

*

STOCK SIZES:
4 ft. wide x 8, 9, 10 & 12 ft. long

SPECIAL SIZES *(made to order)*:
Any width, of 4 ft. or less, and any length, greater or less than 12 ft.

NOW AVAILABLE IN

3 QUALITIES AND 3 FINISHES

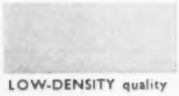
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STANDARD quality


HARDBOARD faced


ROOFING quality

ALUMINIUM faced


LOW-DENSITY quality


SOMIC faced

For latest details technical data & B.R.S. Reports

FILL IN COUPON AND POST NOW

Please send details of NEW range of STRAMIT Building Slabs:

Name of firm.....

Address.....

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For the attention of.....*Status*.....

STRAMIT BOARDS LTD. COWLEY PEACHEY, UXBRIDGE, MIDDLESEX

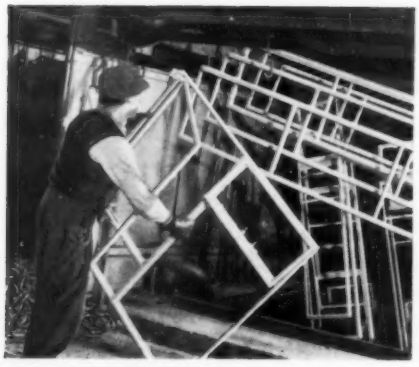
ABN *Phone:* **West Drayton 3021**



STAGE 1



STAGE 2



STAGE 3

THE FACTS about ZINC METALLISED WINDOWS

Let's face it — the enemy of all Steel Windows is R-U-S-T. But whilst a good coating of zinc will do the trick, not everyone agrees which is the best way to apply it.

The effectiveness of any rustproofing process depends almost entirely upon the *adhesion* of the zinc to the surface of the steel. This is where the first stage of the Thompson Zinc Metallisation Process starts — in the preparation of the surface.

All Beacon Steel Windows — after assembly and inspection — are shot blasted at a pressure of 80 lbs. p.s.i., to remove rust, scale, grease and dirt. This is a vital part of the Thompson process because perfect adhesion between zinc and steel can only be assured with a meticulously clean and slightly roughened surface.

Stage Two is the application of the essential protective zinc coating (99.5% pure). The Thompson process has the outstanding advantage of permitting windows to be rust-proofed as completely assembled units — thus preserving their close fitting tolerances. Under the flame of the oxy-propane spray gun every nook or cranny where moisture can penetrate and collect receives its heavy overcoat of rust-resistant zinc.

Finally, to seal the surface, each Beacon Window is passed through a zinc chromate primer bath and stoved at a controlled temperature of 400°F. Here again, *adhesion* is the operative word — for there could be no better key than the zinc coating produced by metallisation. The hard, smooth protective skin thus formed serves three purposes. It insulates the zinc against attack from any dissimilar metallic-based finishing coats which may be applied later. It also gives full protection against possible corrosion due to stacking on unsuitable soil prior to use. But, most important of all, the priming coat, upon which so much ultimately depends, is applied at the factory, where its quality and workmanship can be properly controlled and supervised.

The Zinc Metallisation Process described above is in accordance with the requirements laid down in B.S.S. 990, 1945 and the rust-proofing, therefore, will pass the tests described in B.S. 729.

BEACON
METAL WINDOWS

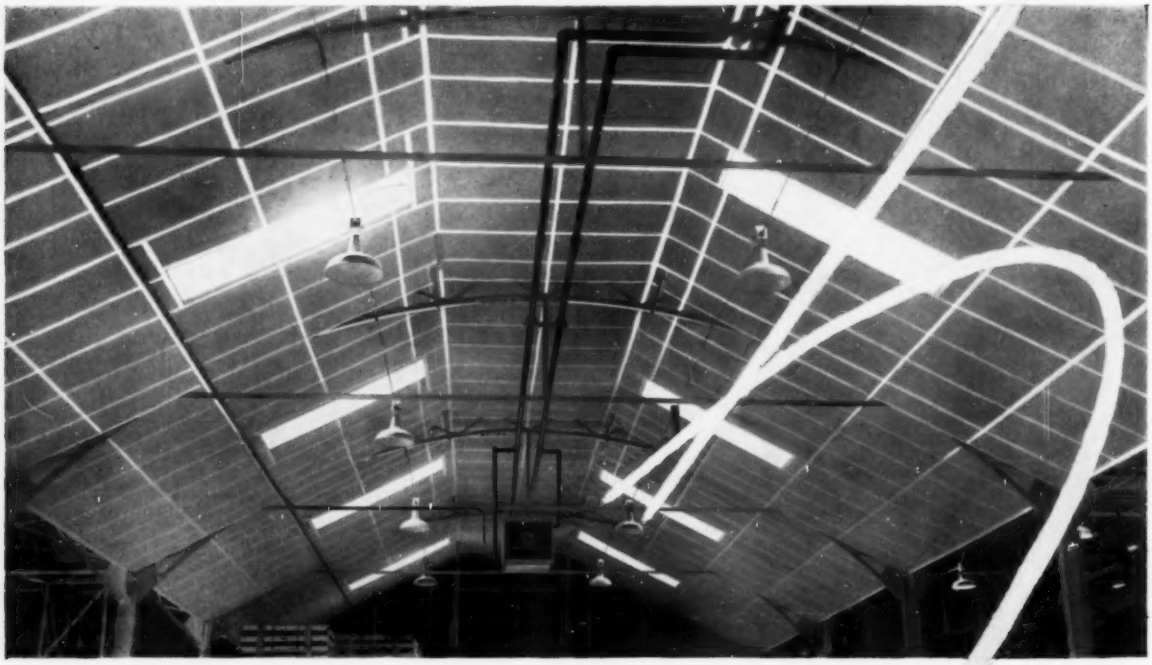
Member of the Metal Window Association

JOHN THOMPSON BEACON WINDOWS LTD · WOLVERHAMPTON

G★

This new ceiling board reduces fuel bills, noise and fire risks

A new *First* for Fibreglass. A ceiling board that is everything a good ceiling should be — that insulates thermally and acoustically equally well, and has a high degree of fire resistance inherent in the material from which it is made.



Here are the facts and figures :—

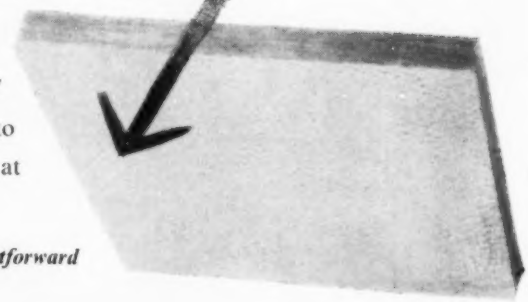
Thermal conductivity at normal temperature : 0.25 B.T.U. inch/ft. ^{2}hr. $^\circ$F

Noise reduction coefficient — average over 200/2000 c.p.s. 0.80.

Fire resistance test BS 476/1953 : Class I (Surface of very low flame spread — the highest classification.) *N.B. As its fire resistance does not depend on a surface treatment, the board remains Class I, even when punctured or cut.*

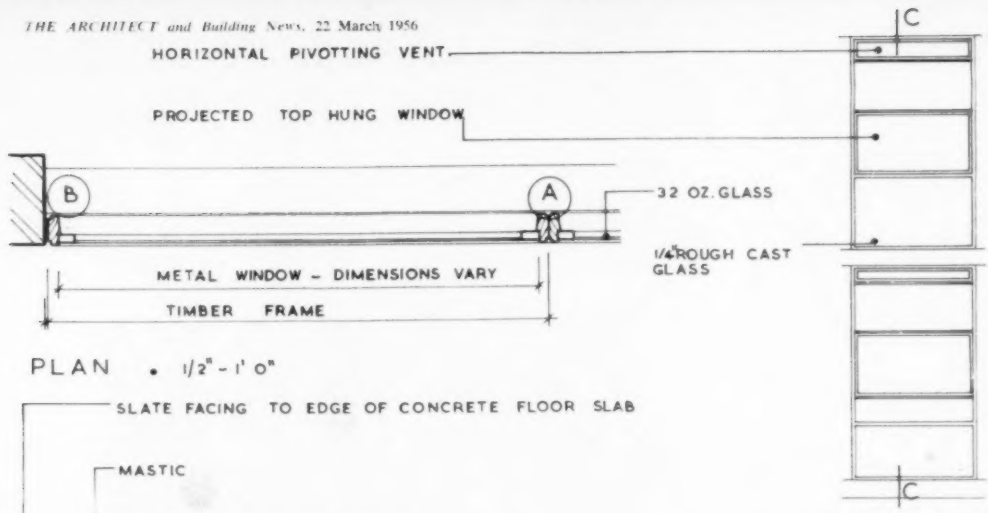
The new board is supplied in one size to suit a grid 4′ x 2′ on centres, in thicknesses of $\frac{1}{2}$″, $\frac{3}{4}$″, 1″ — and up to 2″, to order and is compatible with most rail systems. Weight, at 1″ thickness, only 10-ozs./board foot, or 60 lbs./100 ft.

Decoration, with a non-bridging paint, is straightforward



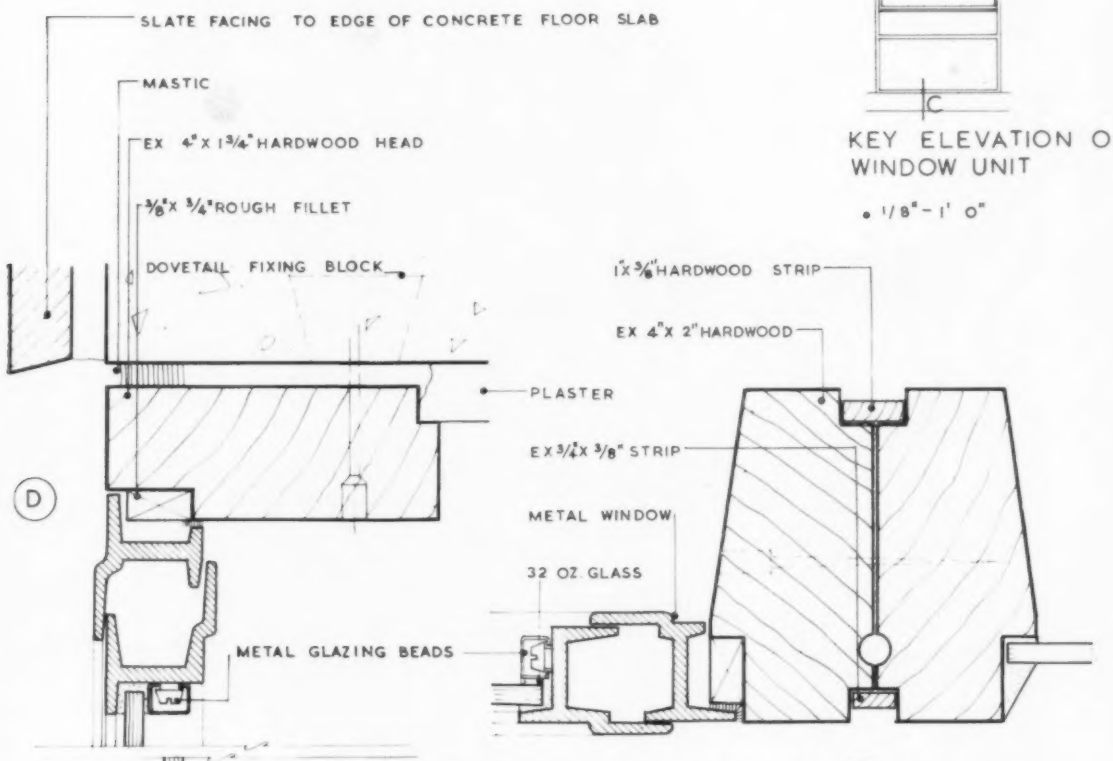
FIBREGLASS TRADE MARK *Ceiling Board*

Fuller details from FIBREGLASS LIMITED, RAVENHEAD, ST. HELENS, LANCS. ST. HELENS 4224

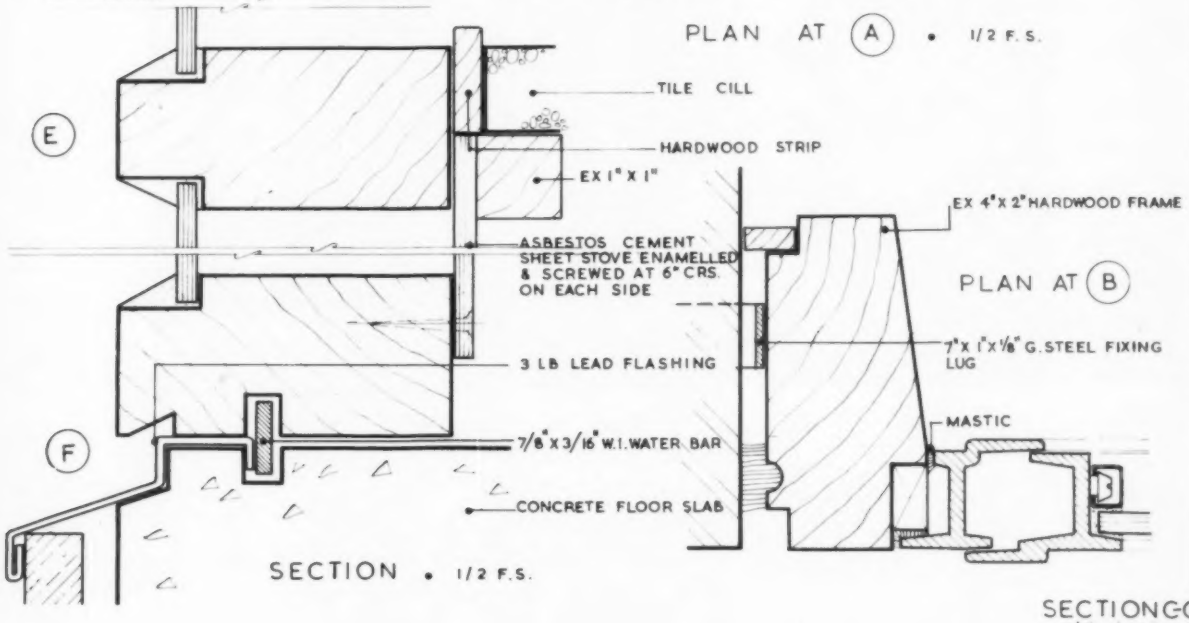


PLAN • 1/2" – 1' 0"

KEY ELEVATION OF WINDOW UNIT
• 1/8" – 1' 0"



PLAN AT (A) • 1/2 F.S.



SECTION • 1/2 F.S.

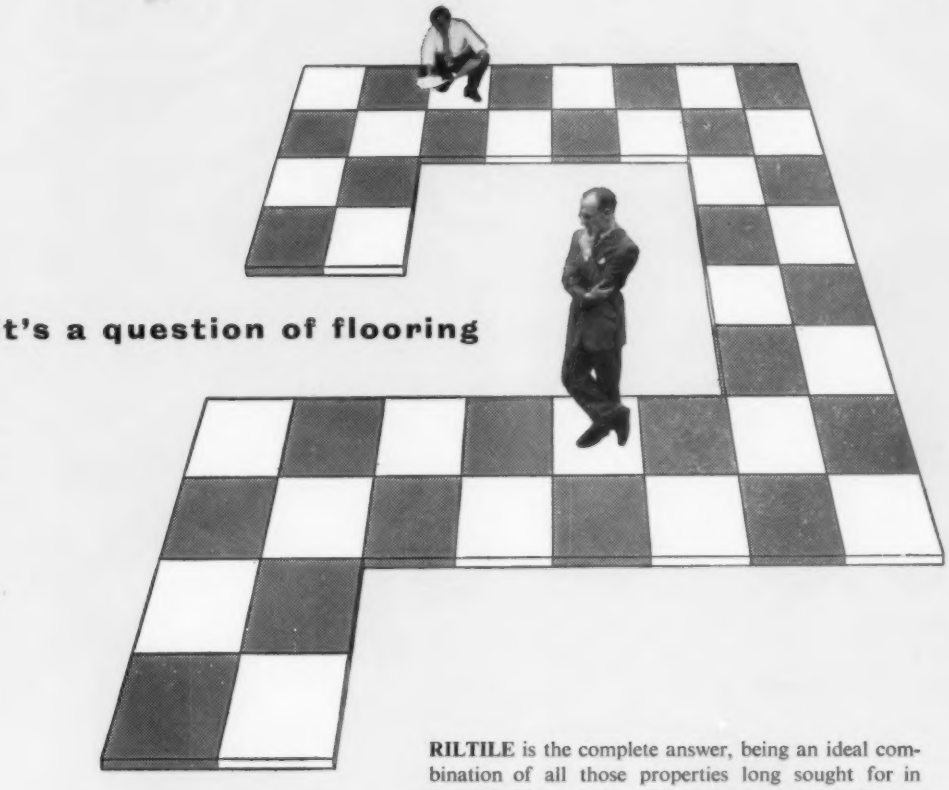
SECTION C-C
• 1/2" – 1' 0"

WINDOW. SCHOOL PUTNEY. LONDON • POWELL & MOYA

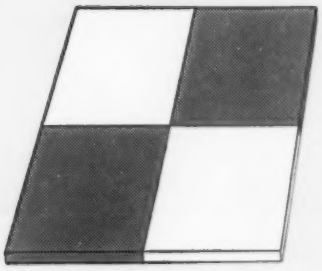


WINDOW: SCHOOL, PUTNEY, LONDON

ARCHITECTS: POWELL & MOYA



when it's a question of flooring



RILTILE is the complete answer, being an ideal combination of all those properties long sought for in flooring. The outcome of intense research based upon long experience, this new thermoplastic hard tile is recommended with every confidence for use in hospitals, kitchens, bathrooms, offices, shops, bars, restaurants.

RILTILE is made in tiles only, measuring $9'' \times 9'' \times \frac{1}{8}''$, in a wide range of colours and mottled effects and at a cost to compare favourably with good quality inlaid linoleum. Damp proof, heat insulating, with excellent resilience, **RILTILE** is also impervious to dilute acids, alkalis, and is resistant to hot and cold water. It should be noted that only 12 hours are required after laying, before the floor is ready for normal traffic. While not completely fireproof, the asbestos used in the manufacture of **RILTILE** gives it excellent fire-resisting qualities.

RILTILE

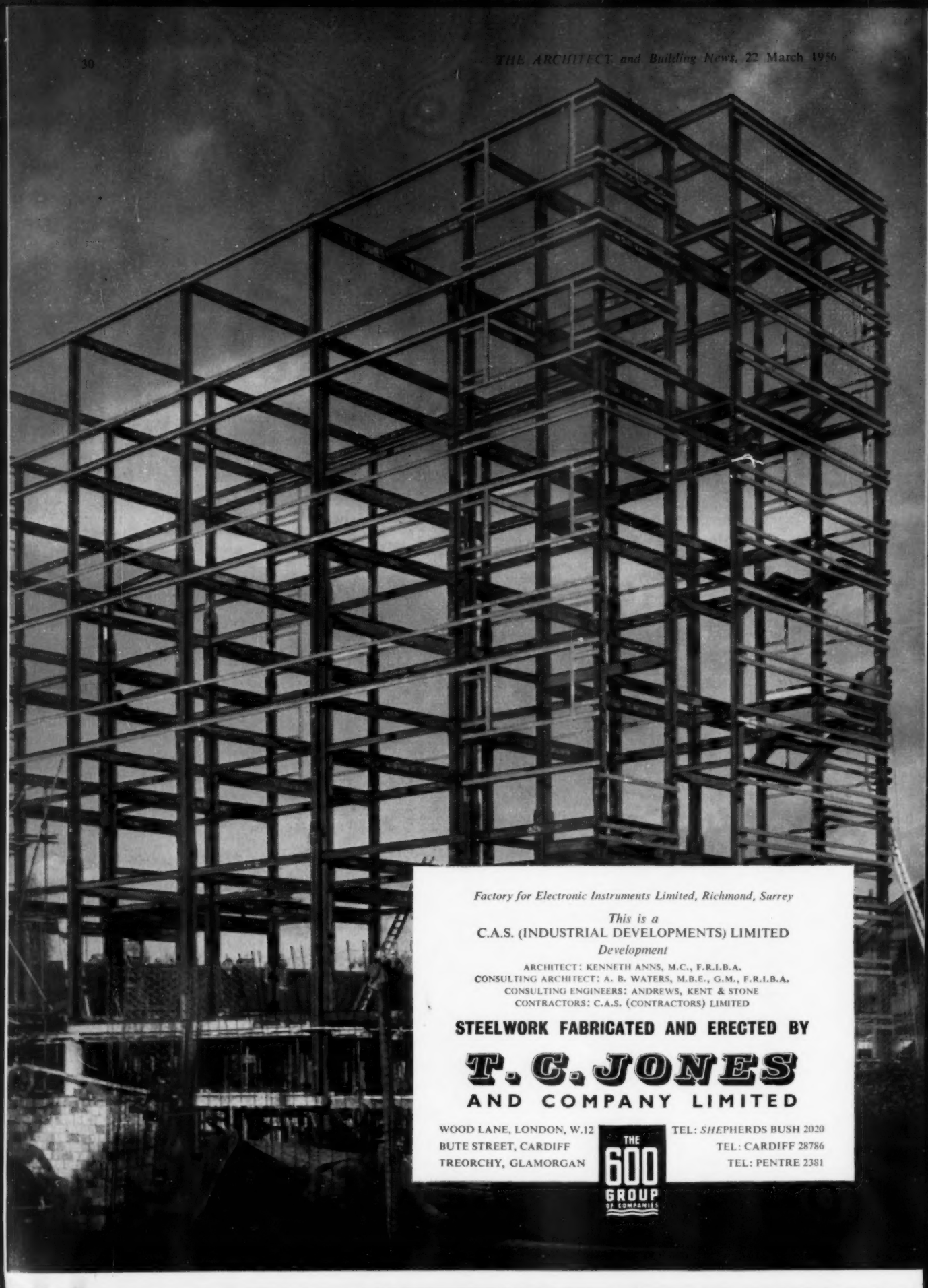
Thermoplastic Flooring

Extremely hard wearing ☐ ***Easily and quickly laid***

Reduces foot fatigue ☐ ***No special cleaning required***

Write for samples and illustrated brochure—

BRITISH MOULDEX LTD · MOULDEX HOUSE · 27/29 Fitzroy Street, London, W.C.1 · Tel: LANgham 4211/2



Factory for Electronic Instruments Limited, Richmond, Surrey

This is a
C.A.S. (INDUSTRIAL DEVELOPMENTS) LIMITED
Development

ARCHITECT: KENNETH ANNS, M.C., F.R.I.B.A.
CONSULTING ARCHITECT: A. B. WATERS, M.B.E., G.M., F.R.I.B.A.
CONSULTING ENGINEERS: ANDREWS, KENT & STONE
CONTRACTORS: C.A.S. (CONTRACTORS) LIMITED

STEELWORK FABRICATED AND ERECTED BY

T. C. JONES
AND COMPANY LIMITED

WOOD LANE, LONDON, W.12 — TEL: *SHE*PHERDS BUSH 2020
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THE 600 GROUP OF COMPANIES

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DATE OF ISSUE 22 MARCH, 1956

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THE ARCHITECT & BUILDING NEWS
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STAMFORD STREET,
LONDON, S.E.1.

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Advertiser's name only	*Page No.*	*Advertiser's name only.*	*Page No.*

Reader's Name and Address.....

.....

Profession or Trade.....

DATE OF ISSUE 22 MARCH, 1956

CONTRACT • NEWS •

*Notes below give basic data of contracts open under locality and authority which are in bold type. References indicate : (a) type of work (b) address for application. Where no town is stated in the address it is the same as the locality given in the heading (c) deposit (d) last date of application (e) last date and time for submission of tenders. Full details of contracts marked * are given in the advertisement section.*

OPEN

BUILDING

ABERDARE U.C. (a) Adaptation of part of the Council's Transport Offices, Gadlys Estate, Aberdare, into a canteen for omnibus personnel, and rearrangements of the office accommodation. (b) Council's Engineer, Vestry Hall. (c) 2gns. (e) March 31.

* * *

BICESTER U.C. (a) Erection of six bunaglows in three blocks at north No. 1 site. (b) Harry W. Smith and Son, 29 George Street, Oxford. (c) 2gns. by cheque payable to Council. (e) March 30.

* * *

BIRMINGHAM C.C. (a) Erection of (Contract 548) 9 dwellings in Alcester Road, Moseley, and (Contract No. 555) 6 dwellings in Douglas Road, Handsworth. (b) City Architect, Civic Centre. (c) 2gns. each contract. (d) March 21. (e) April 25.

* * *

BLANDFORD R.C. (a) Erection of 20 houses and site work at Bryanston. (b) E. A. Down, 47 Boscombe Overcliff Drive, Bournemouth, Hants. (c) 2gns. (e) April 3.

* * *

BLOFIELD AND FLEGG R.C. (a) Erection of 2 pairs of houses at Thurne, and 1 pair of bungalows, at Blofield. (b) Council's Clerk, Council Offices, Acle, Norfolk. (c) 2gns. (e) April 2.

* * *

BURY ST. EDMUNDS B.C. (a) Erection of 20 three bedroom houses in 5 blocks each of 4 houses in Tollgate Lane, Howard Estate. (b) Borough Engineer, Borough Offices. (c) 2gns. (e) April 5.

* *

CHERTSEY U.C. (a) Erection of maintenance workshop additions at the Council's Central Depot, Fordwater Road. (b) Council's Engineer, Council Offices. (c) 1gn. (e) April 4.

* * *

CHISLEHURST AND SIDCUP U.C. (a) Erection of one block of 18 flats, together with outbuildings, garage blocks and public conveniences, in Mottingham Road, Mottingham. (b) Council's Clerk, Council's Offices, Sidcup Place, Sidcup, Kent. (c) 2gns.

* * *

CONGLETON B.C. (a) Erection of 6 bungalows at Parson Street and 4 bungalows at Solly Crescent. (b) Borough Engineer, Town Hall. (c) 2gns. (e) April 7.

* * *

COVENTRY CORPORATION. (a) Erection of 10 police dwellings at Alfred Road. (b) C. F. Redgrave and Partners, 6 The Quadrant. (c) 2gns by cheque payable to Council. (e) April 6.

* * *

CRAWLEY DEVELOPMENT CORPORATION. (a) Erection of 21 One B.R. bungalows; 17 Two B.R., 555 Three B.R., 59 Four B.R., Three 5 B.R. houses; 14 one B.R. and 111 Two B.R. flats and

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204 garages, at Tilgate, Stage 111. (b) Chief Architect, Broadfield. (c) March 24.

* * *

DOVER B.C. (a) Erection of six flats and two shops in one block at Old Folkestone Road. (b) Borough Engineer, Brook House. (c) 2gns. (e) April 9.

* * *

DURHAM C.C. (a) Erection of four standard police houses at Newtown, Stockton, and six at South Road, Norton. (b) County Architect, South Street. (d) March 20.

* * *

ELLESMERE R.C. (a) Erection of 8 houses in Harmer Hill. (b) A. E. Williams, Kenneth Chambers, Dogpole, Shrewsbury, or Council's Clerk, Council Offices, Trimpley Hall, Shropshire. (e) April 9.

* * *

ESSEX C.C. (a) Heating installation at Loughton high school for girls. Approx. cost £3,500. (b) County Architect, County Hall, Chelmsford. (d) April 3.

* * *

GRANTHAM B.C. (a) Erection of 50 houses on site 6, Belton Lane. (b) Borough Surveyor, Guildhall. (c) 2gns. (e) April 7.

* * *

GREAT YARMOUTH B.C. (a) Carrying out alterations to the technical college. (b) Schools' Architect, 22 Euston Road. (c) 1gn. (e) April 6.

* * *

HEYWOOD B.C. (a) Erection of 96 flats at Hardfield. (b) Borough Engineer, Municipal Buildings. (c) 4gns. (d) March 29. (e) April 27.

* * *

HORSHAM U.C. (a) Erection of three pairs of bungalows at New Street. (b) Council's Engineer, Council Offices, Horsham Park. (c) 2gns. (e) April 6.

* * *

LIVERPOOL C.C. (a) Carrying out alterations to housecraft department, Warbreck, Longmoor Lane S.M. school, and alterations to housecraft centre, Northcote Road C.P. school. (b) City Engineer, Municipal Buildings. (e) April 9.

* * *

LONG EATON U.C. (a) Erection of 30 houses and 12 bungalows at Draycott Road, Sawley. (b) Council's Engineer, Town Hall. (e) April 4.

* * *

MAIDENHEAD B.C. (a) Contract No. 4K. Erection of 58 houses at Spencers estate. (b) Borough Engineer, 14 Craufurd Rise. (c) 2gns. (e) April 4.

* * *

MANCHESTER C.C. (a) (1) Carrying out alterations and extensions at Ducie Avenue Technical School, and (2) alterations to Southall Street School. (b) City Architect, P.O. Box No. 488, Town Hall. (e) March 31.

* * *

N. IRELAND—BELFAST C.C. (a) Erection of a primary school at Springhill, off Ballygomartin Road. (b) Education Architect's Department, 40 Academy Street. (c) £5. (e) April 19.

* * *

N. IRELAND—CASTLEREAGH R.C. (a) Erection of four houses in Kingswood Park, Gilnabirk, together with ancillary works. (b) Council's clerk, Council Office, 51 Lisburn Road, Belfast. (c) 3gns. (e) April 12.

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N. IRELAND—DUNGANNON R.C. (a) Erection of (1) 4 semi-detached blocks at Killeen site, (2) 2 blocks of four houses at Annaghmore site (3) 2 blocks of six houses and 1 semi-detached block at Mullaghadrolly site, (4) 3 blocks of four houses and 1 semi-detached block at Brackaville site, and (5) 3 blocks of four houses and 2 semi-detached blocks at Gortgonis site. (b) F. H. Wright and Partners, 79 Botanic Avenue, Belfast, or Council Offices, Dungannon. (c) 2gns. each site. (e) April 4.

* * *

N. IRELAND — NEWTONARDS B.C. (a) Erection and completion of 14 dwellings and construction of site works at Ardmore Avenue. (b) Town Clerk, Town Hall. (c) £3. (e) April 9.

* * *

N. IRELAND—OMAGH. (a) Erection of a greasing bay, washing bay, and showroom at Sedan Avenue, for Neilly and Cowan, Sedan Avenue. (b) Neilly and Cowan, or T. J. O'Brien, Irvinestown. (e) 2gns.

* * *

OSSETT B.C. (a) Erection and completion of 18 bungalows and incidental works on the Broadowler site. All or separate trades. (b) Borough Surveyor, Town Hall. (e) April 7.

* * *

PONTEFRACT B.C. (a) Erection of 72 flats and 28 maisonnettes, in 5 blocks, at Horsefair. (b) J. G. L. Poulson, Ropergate. (c) 3gns. (d) March 27. (e) April 20.

* * *

SCOTLAND — AUCHTERMUCHTY ROYAL BURGH COUNCIL. (a) Erection of 22 or 24 houses in six blocks, at Burnside site. All or separate trades. (b) L. A. Rolland, The Albion House, Shorehead, Leven.

* * *

SCOTLAND—KIRKCALDY ROYAL BURGH COUNCIL. (a) Erection of 48 flats at Muttonhall development No. 1. Own house plans, specifications, and schedules of quantities. (b) Burgh Engineer, Town Hall. (e) April 10.

* * *

SHIFNAL R.C. (a) Erection of 6 houses, 4 bungalows and sewerage work at Badger. (b) Walter B. Bond, 6 Walker Street, Wellington, Salop. (c) 3gns. (e) March 31.

* * *

SWINDON B.C. (a) Erection of a three storey block of twelve flats and twelve maisonnettes at Walcot estate. (b) Borough Architect, Civic Offices. (d) March 24.

* * *

WEST HARTLEPOOL CORPORATION. (a) Erection of the infants' department of the proposed Owton Manor primary school. (b) Borough Architect, Municipal Buildings. (e) April 11.

PLACED

Notes on contracts placed state locality and authority in bold type with (1) type of work, (2) site, (3) name of contractor and address, (4) amount of tender or estimate. † denotes that work may not start pending final acceptance, or obtaining of licence, or modification of tenders, etc.

LONDON, W.C. (1) Headquarters building for National Union of Mineworkers. (2) Euston Road. (3) Ashby and Horner Ltd., 21 Bevis Marks, London, E.C.3. (4) £175,000.

BASILDON, ESSEX. (1) Factory, for Ford Motor Company Ltd. (2) Basildon New Town. (3) Sir Lindsay Parkinson and Co. Ltd., 171 Shaftsbury Avenue, London, W.C.2. (4) £1,000,000.

* * *

LIVERPOOL CORPORATION. (1) Rebuilding the Brown Library. (2) William Brown Street. (3) Tysons (Contractors) Ltd., Dryden Street, Liverpool. (5) (provisionally). (4) £401,769.

* * *

LONDON W.C. (1) Large block of showrooms and offices. (2) High Holborn, for The Prince of Wales (Properties) Ltd. (b) Token Construction Co. Ltd., 22 Park Street, London, W.1. (4) £425,000.

* * *

WORTHING B.C. (1) Secondary school. (2) S. A. Gregory (Builders and Contractors) Ltd., Worthing. (4) £190,290.

* * *

HULL CORPORATION. (1) 215 dwellings. (2) Residential Area No. 1 (Western). (3) T. Wright and Son (Hull) Ltd., 57 Regent Street, Hull. (4) £263,064.

BRADFORD CORPORATION. (1) 424 dwellings, 16 shops, recreation centre etc. (2) Wood Side Estate. (3) Direct Labour. (4) £674,000.

* * *

ILFORD B.C. (1) Secondary school. (2) Forest Road. (3) C. Bryant and Son, Ltd., 66 Victoria Street, London, S.W.1. (4) £140,375.

* * *

KENSINGTON B.C. (1) 133 dwellings, shops, etc. (2) Treverton Street area. (3) Leslie and Co. Ltd., Kensington Square, London, W.8. (4) £352,374.

* * *

MANCHESTER CORPORATION. (1) Erection of Wythenshawe College of Further Education. (3) G. and J. Seddon Ltd., Walkden, Manchester. (1) Barlow Hall Secondary School. (3) William Hall and Son Ltd., 60 Christian Street, Liverpool. (4) £186,041. (1) North Manchester High School for Girls. (3) Henry Green and Son (Builders), Stocks House, Cheetham, Manchester 8. (1) Conversion of Brownley Green School. (3) Peter Hodkinson Ltd., Manchester. (4) £126,943. Conversion at Sharston secondary school. (3) G. and J. Seddon Ltd., Walkden, Manchester. (4) £167,308. (1) Extensions at Didsbury Training College. (3) Peter Hodkinson Ltd., Manchester. (4) £147,443. (1) Extensions at Margaret Barclay Special School. (3) Cooper Bros. and John Clayton Ltd., Macclesfield. (4) £84,425.

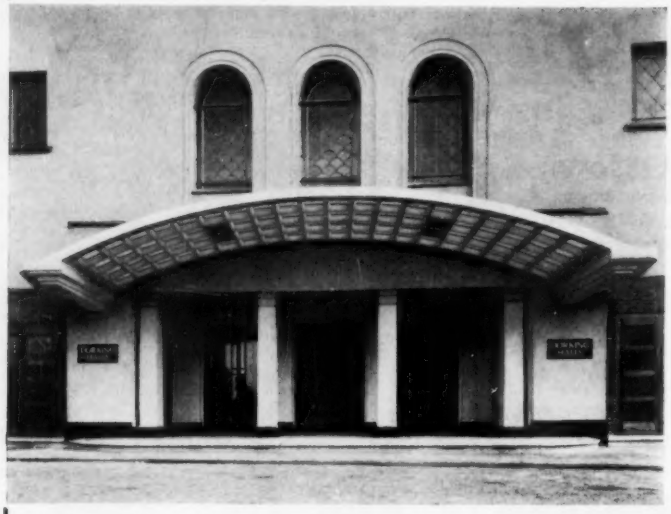
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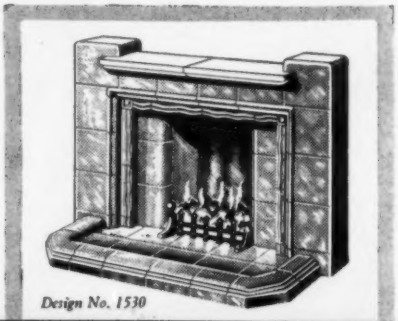
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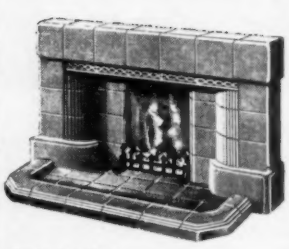


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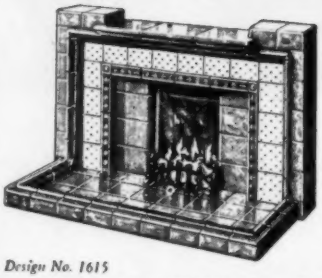
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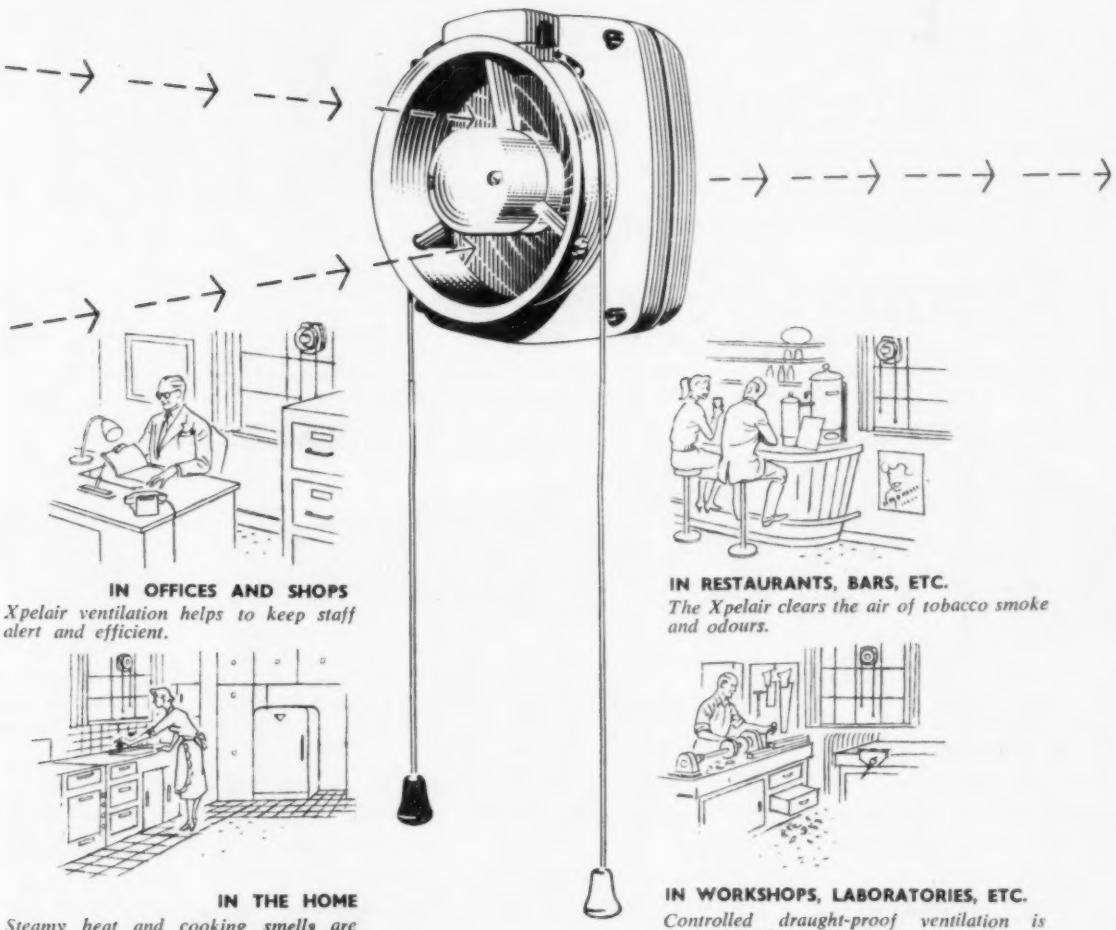


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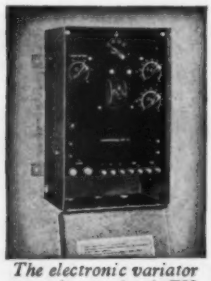
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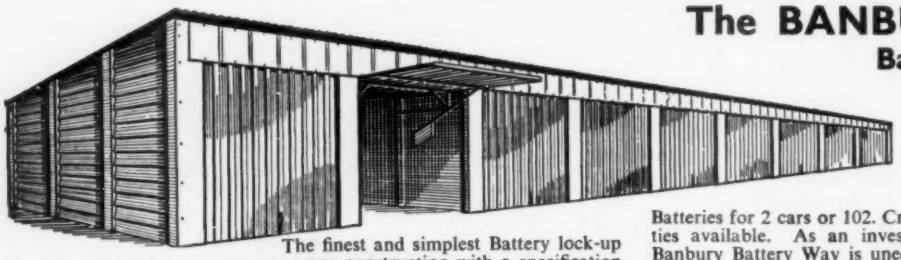


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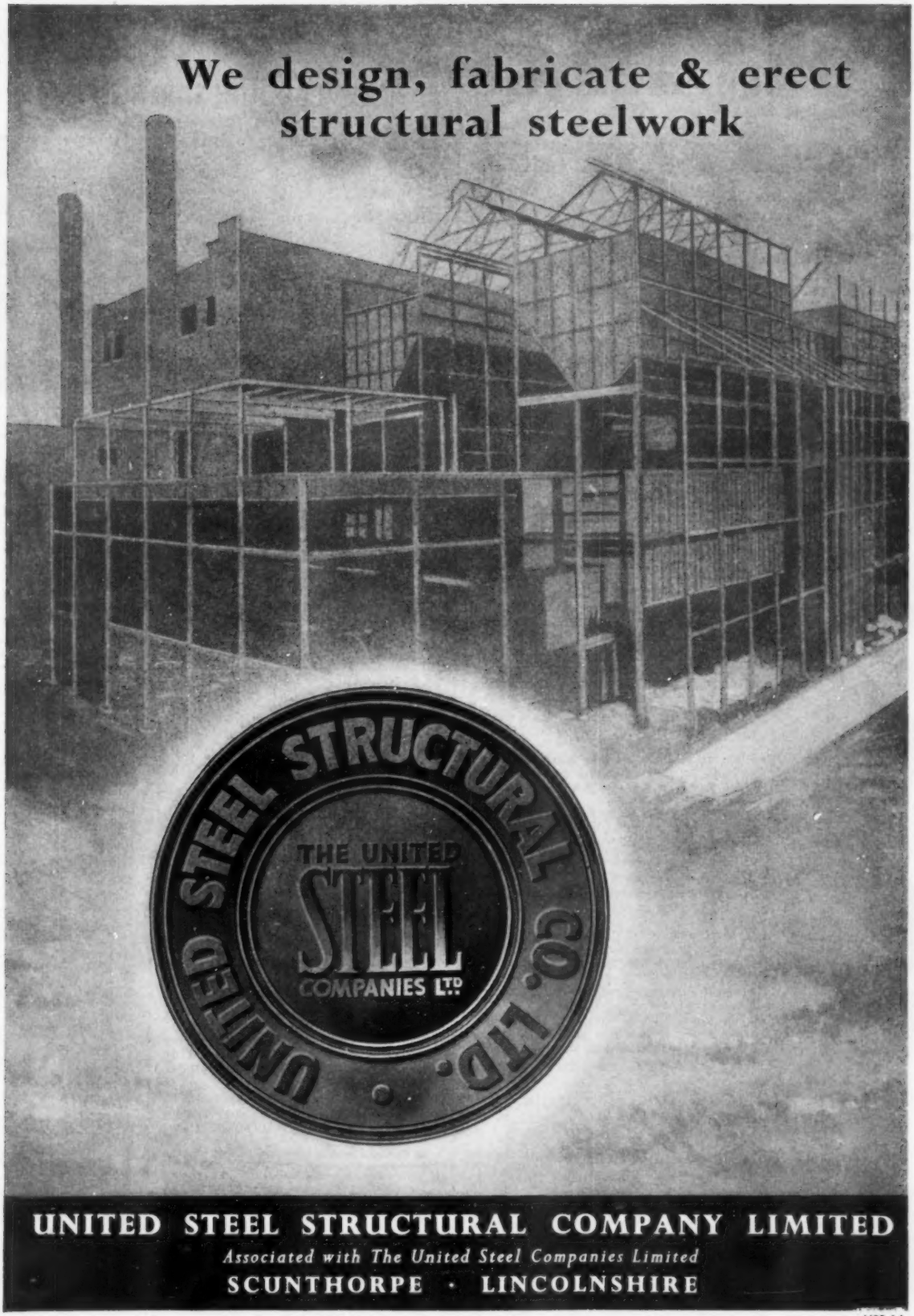


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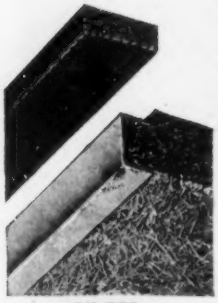
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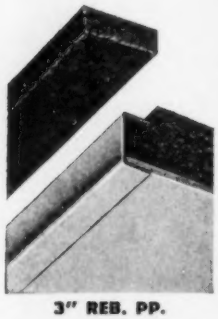
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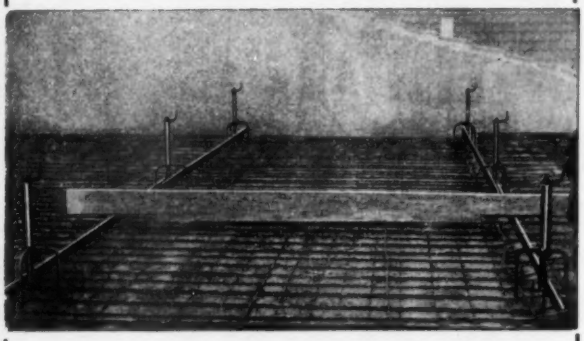
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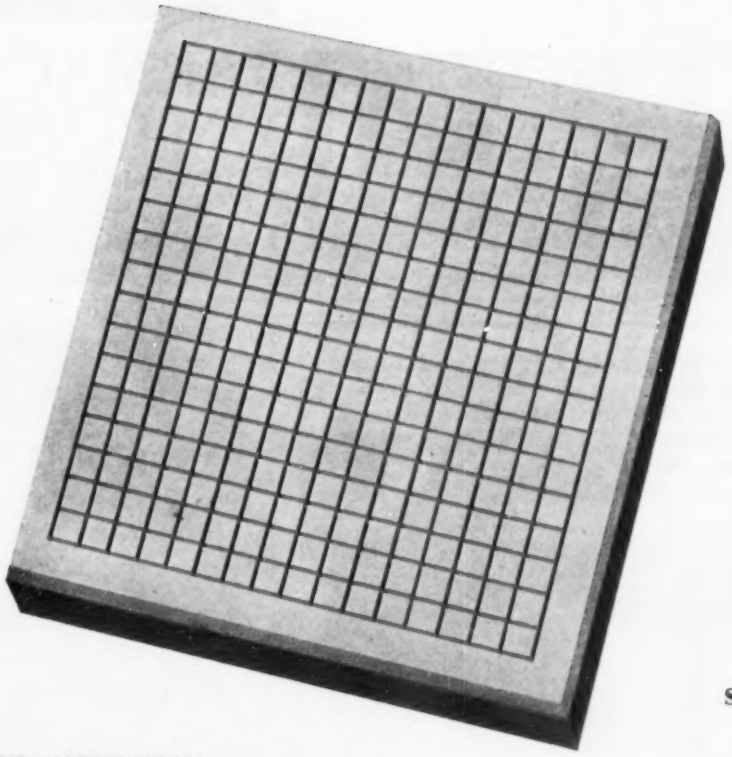
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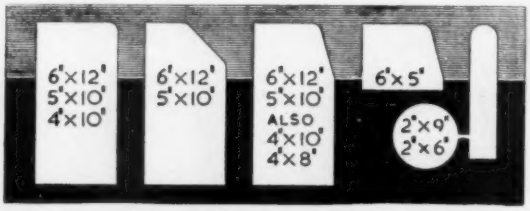
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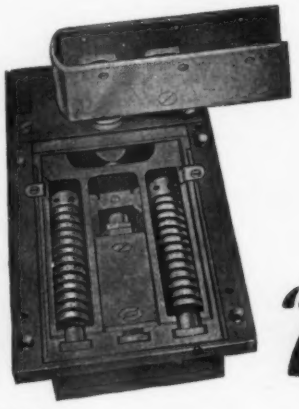
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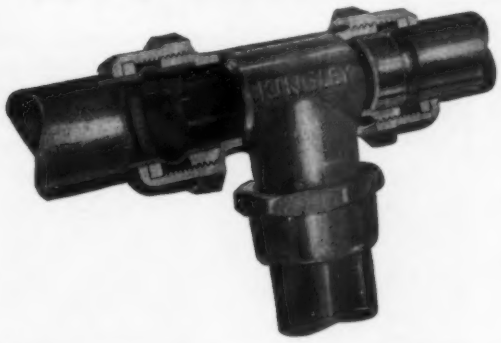
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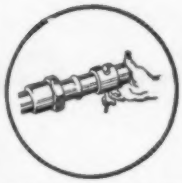
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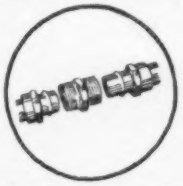
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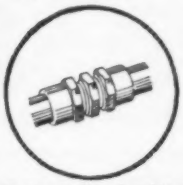




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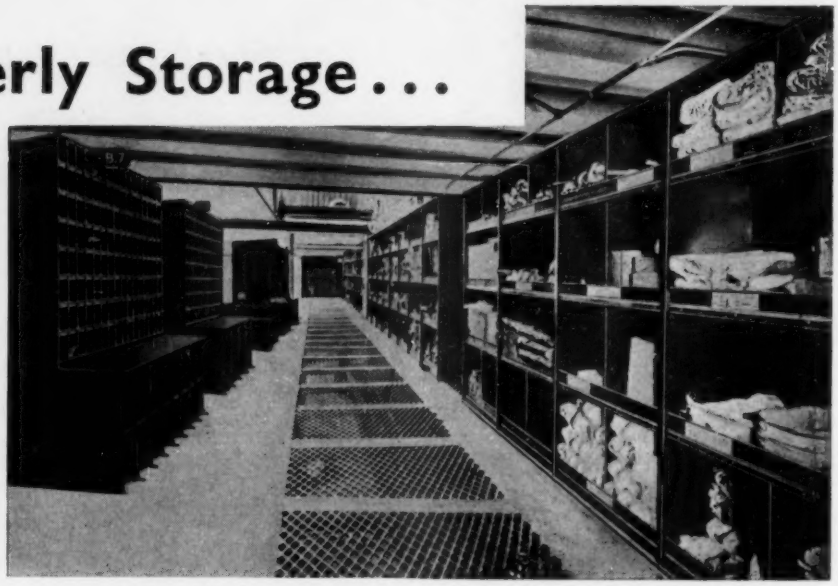
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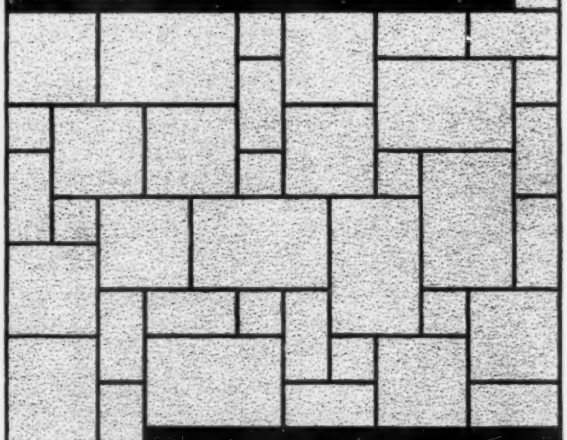
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NOTICE

THE ISSUE DATED APRIL 5 WILL CLOSE FOR PRESS FIRST POST WEDNESDAY, MARCH 28.

APPOINTMENTS

The engagement of persons answering these advertisements must be made through the local office of the Ministry of Labour and National Service, etc., if the applicant is a man aged 18-64 or a woman aged 18-59 inclusive, unless he or she or the employer is excepted from the provisions of The Notification of Vacancies Order 1952.

COUNTY BOROUGH OF EAST HAM

ARCHITECTURAL ASSISTANT —Grade IV £710 - £885

ARCHITECTURAL ASSISTANT —Grade I £530 - £610

PRINCIPAL ASSISTANT ENGINEER (SEWERS) —Grade V £795 - £970

PRINCIPAL ASSISTANT ENGINEER STRUCTURES —Grade V £795 - £970

QUANTITY SURVEYOR —Grade II £595 - £675

Borough Engineer's Department. London Weighting paid. Salary above minima and subsistence allowance may be paid, subject to conditions.

Details and application form returnable within 14 days from this advertisement from Town Clerk, East Ham, E.6. [2145

CUMBERNAULD DEVELOPMENT CORPORATION

APPOINTMENT OF CHIEF ARCHITECT AND PLANNING OFFICER.

APPLICATIONS are invited for the post of Chief Architect and Planning Officer to the Cumbernauld Development Corporation. The functions of the post include the direction of the architectural and planning departments of the Corporation and advising the Corporation on the planning of the new town and the design and execution of development projects carried out by the Corporation. Candidates should be Corporate Members of the Royal Institute of British Architects and of the Town Planning Institute and should, in particular, be familiar with the latest developments in planning standards and technique appropriate to the development of a new town.

The salary range for this appointment will be £1,800 - £2,300 and the initial salary payable will depend upon the qualifications and experience of the successful applicant.

The post will be superannuable under the Local Government (Scotland) Act, 1937 and the Local Government Superannuation Act, 1953.

Canvassing, directly or indirectly, of the members of the Development Corporation will constitute an absolute disqualification.

Applications, containing full details of the candidate's age, qualifications and experience, together with the names and addresses of referees, should be submitted in six copies to the undersigned not later than 19th April, 1956. Envelopes should be marked "Chief Architect".

There is no prescribed form of application.

The Chairman,
Cumbernauld Development Corporation,
c/o Dunbarton County Council,
24 George Square,
Glasgow. [2133

COUNTY BOROUGH OF EAST HAM

ARCHITECTURAL ASSISTANTS (2) Grade II —£595 - £675.

TEMPORARY ARCHITECTURAL ASSISTANT Grade II £595 - £675.

ENGINEERING ASSISTANT Grade I —£530 - £610

BONUS SURVEYOR Grade II —£595 - £675

Borough Engineer's Department. Plus London Weighting. Salary above minima and subsistence may be paid subject to conditions. Details and form from Town Clerk, E.6. Closing date 14 days from this advertisement. [2148

APPOINTMENTS—contd.

COUNTY BOROUGH OF DERBY

BOROUGH ARCHITECT'S DEPARTMENT

Architectural Staff:
(a) A.P.T. Grade IV. (£710 - £885 per annum)
(b) A.P.T. Grade III. (£640 - £765 per annum)
(c) A.P.T. Grade II. (£595 - £675 per annum)
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(e) Higher General Division. (£180 - £500 per annum).

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(g) A.P.T. Grade III. (£640 - £765 per annum)
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(i) Higher General Division. (£180 - £500 per annum).

Commencing salary will be according to qualifications and experience.

Permanent superannuable appointments, subject to one month's notice and to medical examination. National Conditions of Service.

Applicants must state for which post they are applying.

Further particulars and application forms obtainable from and to be returned to The Borough Architect, The Council House, Corporation Street, Derby, not later than Wednesday, 4th April, 1956.

G. H. EMLYN JONES,
Town Clerk.

10th March, 1956. [2139

EDINBURGH COLLEGE OF ART

APPLICATIONS are invited for the post of Assistant Instructor in the School of Architecture, salary scale £760 x £30 x £1,060 per annum; placing according to qualifications and experience.

Form of application and conditions of appointment may be obtained from the Secretary, Edinburgh College of Art, Lauriston Place, Edinburgh, 3, and should be returned to him not later than 23rd March, 1956.

J. R. BROWN,
Secretary.
[2141

GOVERNMENT OF UGANDA

ARCHITECT — MULAGO HOSPITAL PROJECT.

TO assist in preparation of complete working details for building of Mulago Hospital (750 bed African Hospital) and supervise work in progress.

Appointment on contract for one tour of 30-36 months, with probable renewal by mutual agreement. Salary up to £1,620 per annum according to experience, plus 10% cost of living allowance. 13½% gratuity on satisfactory completion of service. Generous assistance provided in certain circumstances for children's education.

Free passages provided for officer and family up to total cost of either 4 air tourist class passages or 3 adult sea passages. Housing available on site. 5 days leave for each month of resident service.

Candidates between 30 and 45 years must be A.R.I.B.A. and familiar with construction of multi-storey reinforced concrete buildings. Experience upon large Hospital projects an advantage.

Apply in writing to Director of Recruitment, Colonial Office, London, S.W.1, giving briefly age, qualifications and experience and quoting reference No. BCD.112/9/014. [2144

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COLLEGE OF ART

Principal: K. Holmes, O.B.E., A.R.C.A.
School of Architecture

APPLICATIONS are invited from Graduates or the holders of a diploma of a recognised School of Architecture for the position of Senior Lecturer in Architecture. Salary: Burnham Scale £1,065 x £25 to £1,215.

The successful candidate will be allowed to engage in private practice.

Applications giving age, qualifications and experience, should be sent to the Registrar, College of Art, Leicester, within 14 days of the appearance of this advertisement.

ELFED THOMAS,
Director of Education.
[2134

APPOINTMENTS—contd.

LONDON ELECTRICITY BOARD

ARCHITECTURAL ASSISTANT

APPLICATIONS are invited for the above position in the Architect's Section of the Chief Engineer's Department in Central London.

Applicants should be studying for or have passed the Intermediate Examination of the R.I.B.A., be capable draughtsmen and have had several years' experience in an Architect's office.

The post is graded under Schedule 'D' of the National Joint Board agreement as Grade 5—£672 to £777 per annum, inclusive of London Allowance.

Application forms from Personnel Officer, 46, New Broad Street, London, E.C.2. Please quote ref: PER/2156/AA. [2146

LONDON COUNTY COUNCIL

ARCHITECT'S DEPARTMENT

VACANCIES for Architects, Grade III (up to £987), and Architectural Assistants (up to £818), for widespread construction programme which includes houses, blocks of flats, schools of all types, and various public and industrial buildings.—Application forms and particulars from Architect, (AR/EK/A/3), The County Hall, S.E.1. (1189). [0006

MINISTRY OF WORKS requires Architectural Assistants in Ancient Monuments Drawing Office, London, with three years' training, experience in Architect's Office, and of Inter. R.I.B.A. standard. Must have surveying experience, sound knowledge of construction, and a live interest in historic architecture. Pay between £660 (age 28) and £750 p.a. according to age and experience. Prospects of promotion and permanency. State age, training and experience to Ministry of Works, W.G.10 (D), Abell House, John Islip Street, S.W.1. [2085

CITY OF NEW SARUM

SENIOR Architectural Assistant required in the City Engineer's Department. Salary within range Grade A.P.T. IV (£710 - £885).

Applicants must possess final R.I.B.A. or equivalent and have had experience in design and detailing of housing schemes, estate layouts and public buildings, and in the supervision and handling of contracts.

Pensionable post. Medical examination required. Housing accommodation provided.

Applications, stating age, present and previous appointments with salaries; with the names of two referees, to the City Engineer, The Council House, Bourne Hill, Salisbury, by April 4, 1956.

Canvassing will disqualify.

[2130

CLERK OF WORKS

REQUIRED immediately on North East Coast, a site assistant to supervise contractors engaged on large and interesting building projects of high architectural standard.

Applicants (age 30-45) must have practical experience of building techniques and contract procedure, preferably with a craft supervisory background, and should have technical qualifications of H.N.C. level in appropriate subjects.

The Appointment is to the permanent staff and carries pension rights, with a starting salary of not less than £900 per annum. This figure might be appreciably increased in the case of an applicant with the right qualifications and experience.

Without commitment, send for application form, quoting reference Z.6, to Box 0775, c/o A. & B. N. [2149

COUNTY BOROUGH OF NEWPORT

APPLICATIONS are invited for the appointments:

(a) Building Surveyor. (Permanent). Grade 4 (£710-£885). Housing accommodation will be provided.
(b) 3 Clerks of Works (Temporary). Grade 2 (£595-£675).

Further information and forms of application obtainable from the Borough Architect, Civic Centre, Newport, Mon., to whom they should be returned not later than Wednesday, 4th April, 1956. [2147

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OFFERS are invited for the purchase and removal from Brunswick Wharf Generating Station of the following:—

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1 — Single Wrought Iron Gate. R.H. 11ft. 3in. high for 3ft. 6in. opening.

1 — Panel of Wrought Iron Railings 10ft. 1¼in. high x 3ft. 6in. wide.

All to match.

For permission to view and Conditions of Tender application should be made to the Divisional Purchasing Officer, Central Electricity Authority, London Division, Generation House, Great Portland Street, W.1, not later than the 13th April, 1956. [2151

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PRESS DAY Friday. Remittancees payable to Iliffe & Sons Ltd., Dorset House, Stamford Street, London, S.E.1.

No responsibility accepted for errors.

ARCHITECTURAL APPOINTMENTS VACANT

The engagement of persons answering these advertisements must be made through the local office of the Ministry of Labour and National Service, etc., if the applicant is a man aged 18-64 *or a woman aged* 18-59 *inclusive, unless he or she or the employer is excepted from the provisions of The Notification of Vacancies Order,* 1952.

REGENT OIL COMPANY LTD. have two vacancies at their London Office for Assistant Architects. Applicants should be fully qualified, have at least 3 years' practical experience, be able to prepare contract documents and supervise site work. The work includes industrial buildings, offices, canteens, laboratories, garages and service stations throughout the country. A thorough working knowledge of construction and design is essential. First class working conditions in new and modern premises. Posts are pensionable. 3 weeks' annual holiday. Luncheon vouchers. — Applications, which must be in writing, stating age, qualifications, experience and salary required to Personnel Officer, 117, Park Street, London, W.1. [2150

ARCHITECTURAL APPOINTMENTS VACANT—contd.

TWO Architectural Assistants required of Intermediate R.I.B.A. standard for work on contemporary industrial buildings. Good salary and plenty of opportunity for initiative. London office. —Write giving details of salary, experience, to Howard, Souster & Fairbairn, 81, Piccadilly, W.1. [2137

A LEADING Assistant Architect is required in the Architect's Office to work on Railway Modernisation projects. Applicants must be Associates of the R.I.B.A. and have several years' experience, with ability to control staff. The person appointed must have a progressive outlook and sound knowledge of modern structural technique. Salary £1,015 rising to £1,115.

Residential and other travelling facilities available. Superannuation Fund scheme.
Five-day week.

Apply in writing to Chief Civil Engineer, London Midland Region, British Railways, Euston Grove, London, N.W.1. [2135

ARCHITECT'S ASSISTANTS required in Architect's Office to work on Railway Modernisation projects. Must be A.R.I.B.A. with keen interest in contemporary design and have knowledge of modern structural technique.

Salary range £770 to £910.
Residential and other travelling facilities available. Superannuation scheme.
Five-day week.

Apply in writing to Chief Civil Engineer, London Midland Region, British Railways, Euston Grove, London, N.W.1. [2136

ADDITIONAL Assistants required by H. L. Meed, A.R.I.B.A., for projected housing schemes. Willing to pay top salaries for the right men.—Phone KEN: 6652 or write 1, Cromwell Road, S.W.7. [2138

ARCHITECT to large furnishing combine requires young assistant (age 18-24) prepared to work on own initiative. Work covers alterations to existing properties and new commercial buildings. Occasional travelling involved.—Write giving full particulars to Box 0752, c/o A. & B. N. [2140

BUCKINGHAMSHIRE firm of Architects within thirty miles of London with a varied practice, require qualified Quantity Surveyors. Five-day week. Salary according to age and experience. Please write, giving full particulars, to Box 0678, c/o A. & B. N. [2142

BUCKINGHAMSHIRE firm of Architects within thirty miles of London with a varied practice, require inter. and junior qualified Architectural Assistants. House available. Five-day week. Salary according to age and experience. Please write, giving full details, to Box 0677, c/o A. & B. N. [2143

NORMAN & DAWBARN invite applications from architectural assistants of Inter. or higher standard. Interesting and varied programme of U.K. and overseas work. — Write to 5, Gower Street, London, W.C.1, or phone Langham 5341. [0094

R. J. BESWICK & SON, F.R.I.B.A., 10, Victoria Road, Swindon, Wiltshire, have vacancies for Architectural Assistants. Salaries according to qualifications and experience. — Apply in writing, or telephone Swindon 2857. [2120

SENIOR Assistant required in West End Office, very busy in interesting commercial work. Must be prepared to take responsibility. Please write giving details of experience, etc., to Box 0312, c/o A. & B. N. [0100

MINISTRY OF WORKS require Architectural Assistants, with 3 years' training, experience in architect's office and of Inter. R.I.B.A. standard. Prospects of promotion and permanency. State salary required, age, details of training and experience to Ministry of Works, W.G.10 (H), Abell House, John Islip St., S.W.1. [2003

ARCHITECTURAL APPOINTMENTS VACANT—contd.

ARCHITECTURAL Assistant required up to intermediate standard, Westminster Office. Pension and Bonus scheme, 5-day week. Write stating experience, age and salary required to Box No. 0114 c/o A. & B. N. [0083

ARCHITECT'S Co-partnership require unmarried qualified experienced assistant in their Lagos office. Maximum tour 14 months. Flat provided. — Write 44, Charlotte Street, London, W.1., or telephone Langham 5791. [0001

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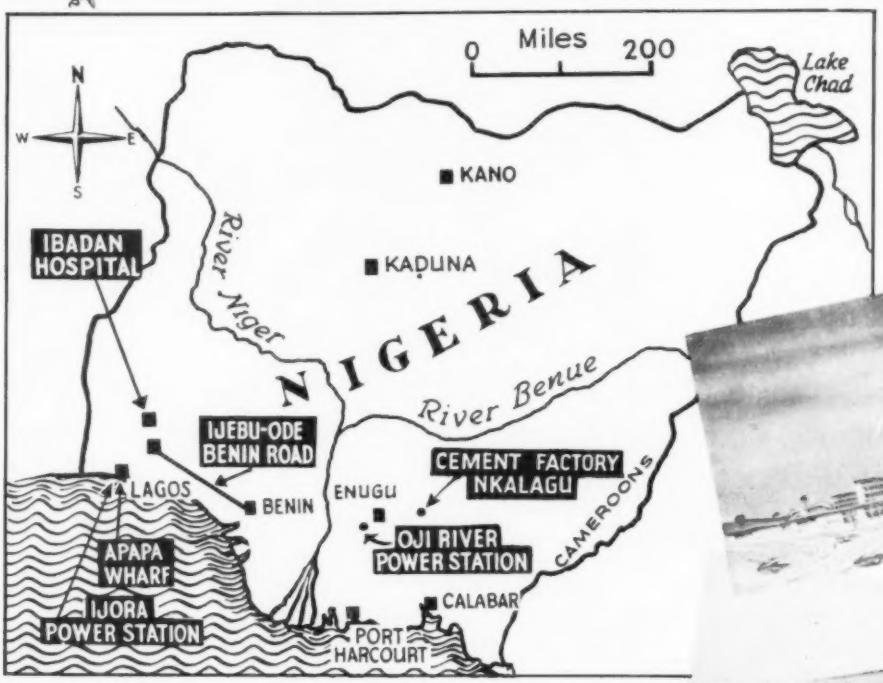
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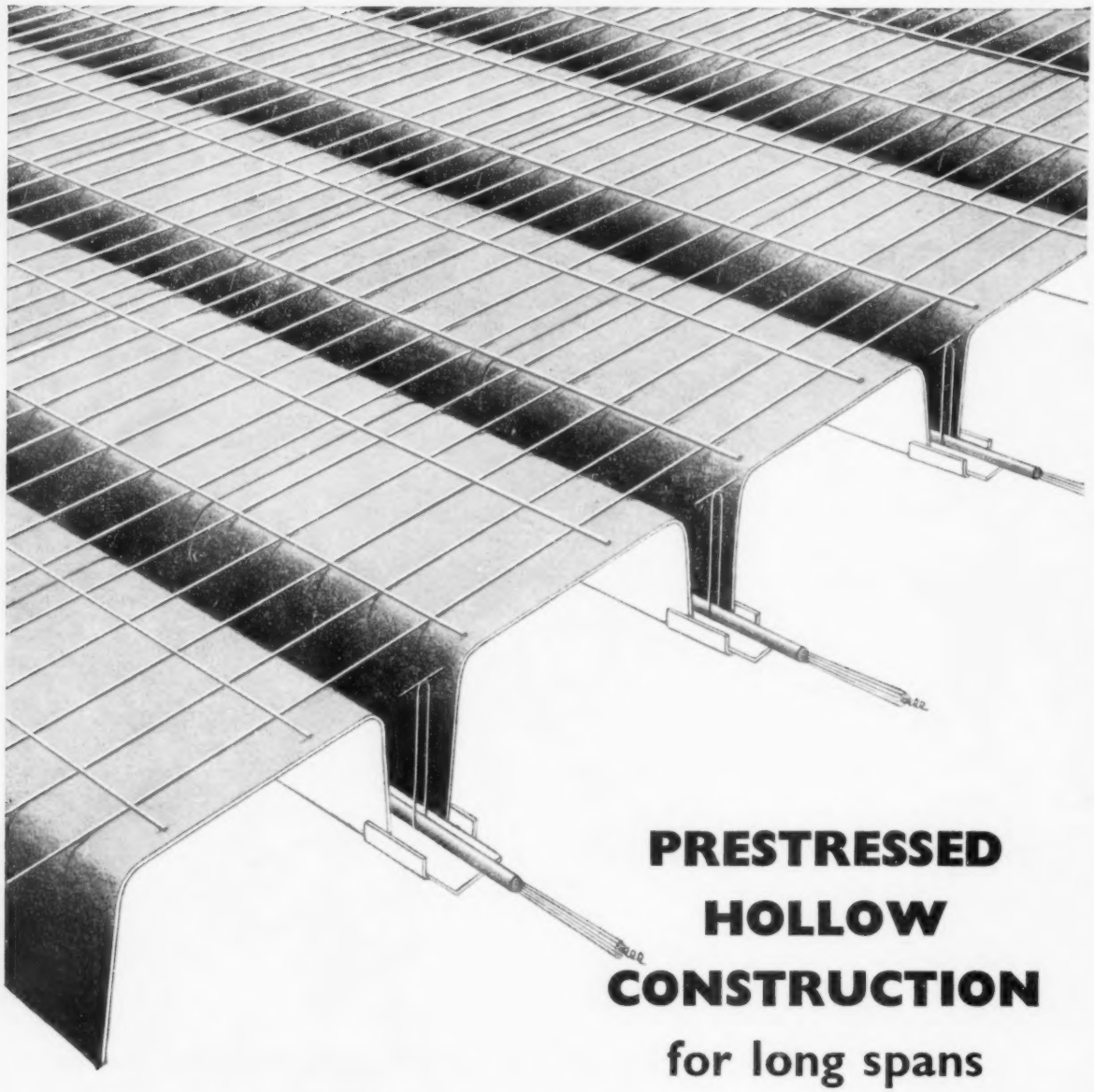
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